# THE JOURNAL

## of the American Medical Association

*Published Under the Auspices of the Board of Trustees*

VOL. 149, NO. 7 — CHICAGO, ILLINOIS — JUNE 14, 1952

COPYRIGHT, 1952, BY AMERICAN MEDICAL ASSOCIATION

# MEDICINE IN 1952

## PRESIDENT'S ADDRESS

*Louis H. Bauer, M.D., Hempstead, N. Y.*

In subscribing to the oath of office as President of the American Medical Association, I am cognizant not only of the honor conferred on me but also of the tremendous responsibilities accompanying the position. When I pledged myself to "promote the public health and welfare," I was promising not only a course of future action but the continuation of a principle that has guided the American Medical Association since its inception more than a century ago. That principle of public service has not always been popular, even among the Association's members. Repeatedly, however, the A. M. A.'s course of action has in time been justified by results, and has won universal approval.

The Association first came under heavy fire nearly a half century ago, when it began its campaign to raise the standards of medical education in this country. Medical education was at a low ebb, and it was imperative that the low grade medical schools and diploma mills existing at that time be eliminated. The campaign was successful, and today we have only high grade schools of medicine in the United States. One dramatic proof of this campaign's success lies in the fact that today this country is the Mecca for medical training. Nowhere in the world is the level of medical education higher. Nowhere in the world is there a higher standard of medical care.

### THE FIGHT FOR HIGH MEDICAL STANDARDS

A little less than a half century ago there were no satisfactory criteria by which either the physician or the public could gage the purity or value of drugs or other medicaments. The American Medical Association initiated a campaign to eliminate worthless drugs and patent medicine fakirs and to establish high standards for therapeutic agents. Again the Association was attacked by those who had been guilty of fraud. The fight was won, however, and the drug industry today is on a higher plane in this country than anywhere else in the world. The industry cooperates fully with medicine in research and in the development of products of high standard. The efforts of the Association's Council on Pharmacy and Chemistry have been a major factor in attaining these results and in raising the character of medical care. Both the profession and the public have been the beneficiaries of this second campaign. So, too, I could mention the work of the Association's other Councils and Committees, which have set universally recognized standards for foods, nutrition, cosmetics, apparatus, and industrial health. The A. M. A.'s Bureau of Investigation has waged a constant war on worthless drugs, charlatanism, and quackery with marked benefit to the public. Yet without exception these campaigns have met with opposition at the start.

Now, the Association is told that its scientific activities are all right, but its socioeconomic policies are all wrong. Twenty years ago we were criticized because we dared to question some of the developing health insurance plans. What was overlooked, of course, was the fact that no criteria had been established at that time by which to assess such insurance and that little reliable information about it was then available. A year later we recommended experimentation in that field and listed safeguards to be included in plans for the protection of patients. As a result, voluntary health insurance has become the fastest growing insurance project in history and is providing a sound means for prepayment of the major costs of illness. Yet, now we are vilified because we do support it and because we continue to oppose compulsory health insurance.

### CONTINUING WORK TO IMPROVE VOLUNTARY PROGRAMS

There are, of course, defects and shortages in the voluntary programs of today, and we are striving to eradicate them. Protection must be developed for those over age 65 and for those suffering from financially catastrophic illness. These gaps in coverage not only must be eliminated, but they will be, through the untiring efforts and cooperation of all physicians, prepayment plans, and insurance organizations. With such teamwork, I predict that within a few years the tumult and the shouting over health insurance will have died and the American Medical Association will receive as much acclaim for its sup-

Read before the 101st Annual Session of the American Medical Association, Chicago, June 10, 1952.

port of voluntary health insurance as it finally received for raising the standards of medical education.

It seems difficult for some people to distinguish between careful analysis in the public interest and case-hardened do-nothingism. The Association often is accused by its uninformed or politically-motivated critics of opposing everything and supporting nothing. But what are the facts? During the entire history of the American Medical Association, with just one exception, there has been no major federal health law enacted that was not either sponsored or supported by the Association. That one exception proved to be the failure the Association predicted it would be and was not renewed by Congress when the act expired. Yes, there has been criticism and opposition, but we all know that the only individual or organization never criticized is the one that never does anything.

In my oath of office I promised "to strive constantly to maintain the ethics of the medical profession." Our profession makes no pretense of infallibility. It has faults, and we recognize them. We are striving continously to eliminate them. Unfortunately, there are a few physicians who are not a credit to their profession. They consider the practice of medicine as a means of financial gain and that alone. Such persons should be driver out of their medical societies. We have established committees to settle problems that arise in the doctor-patient relationship, and the number of those committees must be increased still further. These committees need, moreover, to be given teeth. Medical societies must be adamant in disciplining those unethical physicians who prey upon the public. A physician who charges exorbitant fees or who, when summoned in an emergency, refuses to make the call unless assured that the patient can pay, or who enters into an agreement with a pharmacist or anyone else for his own financial profit at the expense of the public, is a disgrace to the profession. Only a few are guilty of such practices, but those few do the profession incalculable harm.

### MEDICAL PROGRESS THE CONSTANT GOAL

In my oath, I dedicated myself and my office to bringing increasingly improved medical care within the reach of every citizen. It is not enough that we have the world's highest standards of medical care. This type of service must reach the entire population. It is a goal not easy to attain, but we shall not fail for lack of trying. We must see to it that diagnostic facilities are available to all areas now lacking them. When such facilities are provided, physicians will be attracted to those areas. We must expand our public health facilities to cover all sections of the country. All are in agreement that such expansion is necessary. The only reservations concern the amount of authority to be given the federal government. Let all concerned cooperate and solve this problem, so that large numbers of our population shall not be without proper environmental sanitation, protection against communicable disease, and protection of their food, milk, and water supplies.

Forward looking plans are necessary for the care of chronic invalids, the number of whom is increasing, due to the constantly lengthening life span. Physicians must also take active leadership in the formation of community health councils. Satisfactory programs for the medical care of the indigent must be developed for all areas, along the lines of those in operation in New York, Pennsylvania, and several other states.

Studies of the various methods of delivering medical care are being carried on by the American Medical Association, and these studies will be continued. It becomes increasingly apparent that no one method provides the answer for every area and every group of citizens. That is one of the medical profession's objections to any government-controlled type of medical care plan. Under such a plan the same system would be imposed on every region and every individual regardless of need or local conditions.

Three years ago American physicians answered the challenge of socialized medicine. We have been under vitriolic attack ever since. We have been accused of opposing progress. We have been told that the socialization of medicine was inevitable, that the country was turning socialistic, and that it was useless to fight the government. Our answer to these claims was to meet the issue head on. We did not fear to face up to government even when an attempt was made to intimidate us. We found that many members of the legislative branch of government thought we were right and were eager to give us active support and encouragement. We have not hesitated to go to the people and tell them the story of the pitiful failures of socialized medicine elsewhere. It was not necessary to tell the people that they would never tolerate some of the conditions that inevitably accompany such a system. They saw that for themselves. We have won the support of thousands of organizations and they are continuing in the fight to roll back the persistent tide of socialism.

### PUBLIC RECOGNITION OF SOCIALISM THREAT

When the weight of public opposition to socialized medicine became too heavy for the socializers to bear, we began to hear that the government's compulsory health insurance plans were not socialized medicine. That is ridiculous. Any plan which is supported by taxation of the people and in which the rules and regulations governing the participation of physicians, hospitals, and patients are written by government bureaucrats who also determine the fees for services rendered is socialized medicine in any intelligent person's language.

American medicine, having won a breathing spell in its fight to preserve its freedom, is now accelerating its efforts to improve the quality and availability of medical care. Tonight I want to assure my audience that the American Medical Association will never relax in the fight for better health and longer life for the American people. It will cooperate with any organization that is sincerely working for the same aims. The medical profession is alert to the continuing danger of its socialization, and it will remain alert. But it is aware, also, of a greater danger—a danger to the nation itself. We have not yet reached the state of socialization that now exists in England, but we are traveling along the same road and traveling at a more rapid pace. We physicians, in our fight against socialized medicine, have proved that an aroused citizenry can put a break on this rush toward socialism.

V 1
195

### GREAT DECISION IS UP TO THE PEOPLE

Sufficiently aroused, the American people can bring to a full stop the pell mell retreat from fundamental American principles. But they cannot do it if they do not vote. It is a shameful fact that in the last Presidential election, barely 51% of the eligible voters exercised their right of suffrage. The medical profession, like other groups, has been remiss in the matter of voting, but in this crucial year of decision we intend to set a pattern of good citizenship, in registration and voting turnout. We physicians shall continue as active participants in the democratic processes of our country so long as the democratic processes remain a part of our American heritage.

The great decision—socialism or Americanism—must be made by the people. And it must be made by all the people. Some of medicine's critics have said, rather naïvely, that politics is a dirty hands business, and physicians, who belong to a clean hands profession, should not enter it. How, I ask you, can politics be anything but dirty if those with clean hands stay out?

Elihu Root, a former cabinet officer, once said: "Politics is the practical exercise of the art of self-government. Somebody must attend to self-government if self-government is to continue. The principal reproach against any American should be that he is not a politician."

### GOVERNMENT CORRUPTION SHOCKS THE NATION

This nation has had an unexampled, shocking demonstration of corruption in government. Yet recently, a federal official implied that corruption was of no importance as a campaign issue. How are we to eliminate corruption in government unless all citizens express themselves in the only way that counts, by voting?

We are faced today not only with corruption in government but with an attempt to destroy everything on which this nation was built and which has made it great. American institutions and American traditions have been scoffed at. In many cases, our young people are not being taught about American history and the American Constitution, nor why our forefathers established the governing bodies of our country in the manner in which they did. Attempts are even being made to undermine their patriotism. Recently a national magazine polled a large group of young people. About 50% of those interrogated thought totalitarian government a good thing. A large number believed that the press should be limited in the news it could print. Some—and not a small number—were in favor of the "third degree," or worse, in obtaining confessions.

Some government departments seem to have similar feelings. For instance, the Federal Security Agency, the greatest propaganda agency in the United States, recently rebuked a teacher for expressing his views on socialism as he observed it in another country. The teacher was told that the publicity given his comments might bring about the exclusion of his area from the international teacher exchange program. Shall the American people tolerate such infringement of their freedom of speech?

### DEMOCRACY OR BUREAUCRACY

The very fundamental philosophy of Americanism is being undermined. Our country is traditionally a democracy within a republic, but it is fast becoming a bureaucracy ruled largely by administrative law written not by elected, but by appointed officials.

Thomas Jefferson fought against too much power in central government, and supported decentralized government and freedom for individual citizens. Slowly, but surely, one by one, we are losing those freedoms guaranteed by the Bill of Rights. Personal liberties are being traded for government subsidies. We are selling our birthright for a mess of pottage. Unless we act soon, we shall suddenly wake up to find that we have traded liberty for shackles—the shackles of destructive, confiscatory taxation, the shackles of complete dependence upon government for everything in life, the shackles of suppression of initiative and competition, the shackles of suppression of a free press and free speech. In Washington parlance today the word government rapidly is being substituted for the word country. We are told what we should do for our government. I say, we should do everything for our country, but our government should serve us.

### CHALLENGE TO BOTH POLITICAL PARTIES

It is the task of our two major political parties, and their leaders, to see that the people of the United States are given a government that serves rather than a government that dominates. Next month those parties will hold their national conventions here in Chicago. The delegates to these conventions will nominate the next President of the United States. They will write the platform upon which our government policy will stand during the next four years. To those delegates, I say: Your task is monumental. It is historic. Your burden of responsibility hardly has been matched since the days of the Constitutional convention itself. The eyes of the nation—yes, the eyes of the world—will be upon you. You will not be alone in the convention hall. In these days of nationwide radio and television you will have millions watching you, testing your sincerity, weighing your judgment, analyzing your motives. The platforms you write must disavow all threats to our constitutional independence and liberty. They must be bulwarks of a revitalized, positive Americanism. The men you nominate must be men of integrity—fearless men who will be guided by the highest concepts of the welfare of the nation, of the crucial need to preserve America as a haven of hope in a world that seeks peace and freedom. The party that fails to do these things will be the party of failure. A candidate who emerges from a smoke-filled room will be the candidate of defeat.

Further I say to the people of this nation: This is the year in which we must decide whether we want this country to continue its majestic growth as the greatest nation of free men the world has ever seen, or fall into lock-step with the decadent socialisms and totalitarianisms of the old world. This is the year in which we must live up fully to the proud privilege and responsibilities of citizenship for which generations of Americans have worked, fought, and died to hand down to us.

Whatever our party affiliations, we must examine closely the policies professed by every candidate. Neither straddling nor flamboyant evasion must be allowed to

sway us. We must demand straightforward honesty, frankness, and sincerity in our candidates. Only in this way can we be sure that we shall have a government that represents the true will of the people—a government that derives its just powers from the consent of the governed.

About 100 years ago, Daniel Webster said, "It were but a trifle even if the walls of yonder Capitol were to crumble, if its lofty pillars should fall, and its gorgeous decorations be all covered by the dust of the valley. All these may be rebuilt.

"But who shall reconstruct the fabric of demolished government?

"Who shall rear again the well-proportioned columns of constitutional liberty?

"Who shall frame together the skillful architecture which unites national sovereignty with States rights, individual security and public property?

"No, if these columns fall, they will be raised not again."

We shall do well today to remember those words of Daniel Webster.

THE PROMISE TO FIGHT FOR FREEDOM

I am proud to be a member of the American Medical Association which has spearheaded the fight against the socialism that is creeping over this country. I am proud to be the leader of the Association during the coming year. But most of all I am proud to be an American citizen, and I intend to do all in my power to carry out the concluding pledge of my oath of office—to champion the freedom of medical practice and freedom for all my fellow Americans.

American institutions and American traditions must be protected. Through the aroused vigilance of the American people they can and shall be protected. Let us never permit this nation of ours to descend to the level depicted in the third stanza of Kipling's "Recessional":

> "Far flung our navies melt away
> On dune and headland sinks the fire
> Lo! all our pomp of yesterday
> Is one with Nineveh and Tyre,
> Lord God of Hosts! Be with us yet
> Lest we forget! Lest we forget!"

131 Fulton Ave.

# DISADVANTAGES OF SPHINCTER-PRESERVING OPERATIONS FOR CANCER OF THE RECTUM

*Frank H. Lahey, M.D., Boston*

The title of this discussion has been deliberately made provocative to aid those who doubt the wisdom of employing sphincter-preserving operations in cancer of the rectum to decide as soon as possible whether it is justifiable to continue their use. It is the frank purpose of this discussion not to attempt to settle anything definitely but to question the wisdom of using these operations except as palliative procedures and to present recent data from the literature on which at least some impressions concerning this matter may be based.

A comparison can now be made of the three operations designed to preserve anal function. One is the procedure employed by Dixon and Wangensteen, which is virtually a low anterior resection with an end-to-end anastomosis. The second was originally proposed by Maunsell and Weir and is also an anterior resection with end-to-end anastomosis, differing from the first only in the method of doing the low anastomosis (by evagination, amputation, suture, and invagination). The third is the pull-through or sphincter-preserving operation of Babcock and Bacon in which the bowel is pulled through the sphincter or the sphincter is cut and resutured.

In any comparison of attempts to preserve the anal sphincters with anal continence in surgical treatment of cancer of the rectum, one should first state that the abdominosacral removal of the rectum and sigmoid, popularized by Miles, with an abdominal colostomy, is an extremely satisfactory operation for cancer in this region. Were it not for the objection, fancied or real, to the abdominal colostomy, no other operative procedure would even be considered comparable with it in effectiveness. In this operation a long tube of bowel with its adjacent mesentery containing the constant upward pathway for spread of the growth into lymphatic nodes is removed. The lateral ligaments well out to the side of the pelvis, with their contained middle hemorrhoidal vessels and accompanying lymphatics, are removed. The levators with their laterally placed, however sparse, lymphatics, as well as the inferior hemorrhoidal vessels with their accompanying lymphatics, are removed. The operation is performed with the anus closed and without spill of cancer cells from within the closed intestinal tract, limiting the possible sources of direct cancer cell spread entirely to the handling of the malignant lesion or dissemination from the outside by contacts with the lesion.

The mortality rate for this operation is fairly well established. The rate in this clinic for 1949, the last year for which figures are available, was 2.3%. Our operability rate for the same year was 96.4%. The five year survival rate for the period from 1945 to 1949 for all the patients who could be submitted to the radical abdominoperineal removal, including those with favorable and unfavorable results, was 45.4%, and in the group with most favorable results it was as high as 90%. This, it must be admitted, is a most satisfactory set of figures with which to contend that abdominosacral removal of a cancer of the rectum with an abdominal colostomy is an almost ideal operation. It supports the contention I have often stated over the years, that is, that, for practical purposes, the only chance to cure patients with cancer of the rectum is the first one, for which reason the operation must be the most radical that can be employed

From the Department of Surgery, the Lahey Clinic.

and leave the patient in a reasonably happy state postoperatively. The abdominosacral procedure is applicable to all types of lesions, large and small, to all types of persons, fat and thin, to all types of pelves, wide or narrow, shallow or deep, and to all grades of lesions, of low or of high grade malignancy. With these requirements in mind, it can be stated without reservation that this operation, better than any other operation available, most completely meets them. Every other operation for this lesion must, in justice to the patients, be subjected constantly to the most critical comparison with it.

Comparison of results of anal-function-preserving operations with these figures must be based at least on ability to accomplish relatively the same operability rate, the same mortality rate, and the same five year survival rate, with retention of rectal sensation that distinguishes gas from feces and warns the patient of need for defecation, so that anal contents are retained even in the presence of liquid feces. In discussing these requirements, I have over the years, in taking an early and continuing stand against these attempts to preserve the function of the anal sphincter in patients with cancer of the rectum, warned that anything short of these requirements is, together with its other limitations, the establishment of what amounts to a perineal colostomy, the most unfortunate situation for either a colostomy or an ileostomy.

As reports in the literature gradually accumulate, more and more data are becoming available on which to make decisions for or against these procedures. Recent reports by Morgan,[1] Goligher,[2] Dukes [3] and others from St. Marks Hospital with results separate from those of the originators of these methods are now available for study, and from these may be drawn the following conclusions. Since the rectal sensation that warns the person of the desire for defecation probably occurs in the lower 7 to 8 cm. of the rectal mucosa, this sensation is not preserved in the Bacon and Babcock operation in which this segment of sensation-recognizing bowel is removed. It is likewise just, in the light of data now available, to state that the Babcock and Bacon procedures (the pull-through procedures) may retain continence with solid feces but cannot be depended on with liquid feces.

With the technical difficulties of the Maunsell and Weir operation, particularly the need for a long pelvic colon that can be prolapsed through the anus with this type of amputation and anastomosis (evagination and invagination), which cannot always be depended upon to be present, the certainty of blood supply in the patient in whom an adequate amount of colon is pulled down and prolapsed through the anus for this type of procedure must always be, to a degree, dubious.

Of all the procedures proposed to preserve the anal sphincters, that of Wangensteen and Dixon best fulfills the requirements of retaining sensation in the rectal mucosal wall and continence of the sphincters for solids and feces. Of all three procedures, it most completely fulfills the requirements of offering the patient what is promised in an anal-sphincter-preserving operation, that is, continence for solids and liquids with retention of rectal appreciation of the desire to defecate.

In a report by Goligher, figures became available for 146 cases of rectal cancer treated at St. Marks Hospital in London by these three procedures. The mortality rate is reasonable, 8.2%. Certain other disturbing factors, however, appear in this report. One out of 12 of the patients with anterior resections of the Wangensteen and Dixon type leaked feces along the abdominal drain that is placed extraperitoneally. One out of 6 of these patients with anterior anastomoses showed by palpation defects in the suture line at some point in the circumference that had broken down, usually in the posterior third, and communicated with the extrarectal presacral cavity. The late results in these cases are of most striking interest to anyone who is concerned with the comparison of the abdominosacral operation of Miles with operations designed to preserve anal continence. Of 132 patients treated by anterior resection, 11 have had local recurrence at or near the suture line. As stated by the author, "as most of these operations were performed in the last three or four years, further recurrences may be expected in the more recently treated cases." Local recurrence has been the fear of all surgeons who doubt the wisdom of the statement that since lymphatic spread is not downward, resections of lesions just above the peritoneal fold can be safely done if the level of transection of the lower segment is 4 to 5 cm. from the lesion.

There appears to be more and more universal acceptance of the view that lesions of the rectum below the level of the peritoneal reflection have a high recurrence rate, and that the character of lesions at this level owing to their anatomical situation and arrangement is such that they should all be submitted without hesitation to abdominosacral removal. As stated by Gilchrist and David,[4] the likelihood of recurrence, particularly in patients with lymph node involvement, in lesions below the level of the peritoneal reflection is much greater than in lesions above the peritoneal reflection, doubtless because of the structures attached to the rectum and to the lateral lymphatic spread along these structures.

In addition, it has been stated by Dukes that in 1,262 cases of low grade malignancy, nodes were invaded in but 16.8%, while in cases of high grade malignancy, nodes were invaded in 95.5%. It is likewise known that downward spread, that much discussed and, I fear, often overtrusted aspect of cancer of the rectum, is much more likely to occur in anaplastic lesions of the rectum than in lesions of a lower grade of malignancy. The capacity of anaplastic lesions of the rectum to break through the muscularis, to skip lymph nodes in their invasions, and to spread downward and laterally makes lesions of such high grades of malignancy violate all the rules that are said to apply to lesions of low grades of malignancy at these levels. It is admitted by advocates of sphincter-preserving operations that certain conditions must make it undesirable to undertake them, notably, in fat patients with fat-filled mesenteries, in patients with shallow pelves, and in patients with large lesions. In addition to

1. Morgan, C. N.: Cancer of Rectum, Ann. Roy. Coll. Surgeons England **9**:13-24 (July) 1951.

2. Goligher, J. C.: Blood-Supply to Sigmoid Colon and Rectum, with Reference to Technique of Rectal Resection with Restoration of Continuity, Brit. J. Surg. **37**: 157-162 (Oct.) 1949.

3. Dukes, C.: Surgical Pathology of Rectal Cancer: President's Address, Proc. Roy. Soc. Med. **37**: 131-144 (Feb.) 1944. Gabriel, W. B.; Dukes, C., and Bussey, H. J. R.: Lymphatic Spread in Cancer of Rectum, Brit. J. Surg. **23**:395-413 (Oct.) 1935.

4. Gilchrist, R. K., and David, V. C.: Consideration of Pathological Factors Influencing 5 Year Survival in Radical Resection of Large Bowel and Rectum for Carcinoma, Ann. Surg. **126**: 421-438 (Oct.) 1947.

the above it must be recognized by everyone who has to make these decisions that the size of the growth is no indication of the extent of the spread, which can be determined solely by the degree of anaplasia. Small lesions, seemingly acceptable for sphincter preservation, to the inexperienced can really be, under adequate microscopic examination, demonstrated as highly anaplastic and unfavorable types of lesions for which sphincter-preserving operations should not even be considered. On the other hand, large lesions can be of low grade malignancy, with limited lymphatic invasion.

As I have, of necessity because of the number of patients with carcinoma of the rectum with which we have to deal, closely followed this subject, I have become more and more firmly convinced that preservation of anal continence should not be attempted. No operation yet proposed compares with the Miles abdominosacral operation for cancer of the rectum in terms of offering to the patient that which he seeks as the prime reason for being operated upon for this lesion, that is, the greatest possible chance not to have a recurrence.

These anal-continence-preserving operations should not be done for lesions below the level of the peritoneal reflection, and it is not completely settled whether they should be employed for other lesions. Evidence is accumulating, however, that when all the advantages and disadvantages of these procedures are compared with those of abdominosacral removal of the rectum of the Miles type, the latter operation remains the best operation available, with the fewest complications, that can be offered to patients, with the most likelihood that they will be alive and happy and able to do everything in life.

It is particularly unfortunate that operations that promise preservation of anal continence have such a great appeal that patients accept them all too readily, often in preference to the more suitable procedure, abdominosacral removal. They often accept them, however, with no real ability to know or comprehend what they may be accepting in the way of increased morbidity, lowered five year survival rate, and increased local recurrence rate. Patients probably accept in most cases an operation that, to their minds, offers anal continence with the assumption that it will really provide anal continence, fluid and solid, and that it offers all that the abdominosacral removal with an abdominal colostomy does, factors which are not only not certain at present but, as time goes on, become increasingly uncertain. Many of us who have been interested in the surgical treatment of this lesion over the years have stated that we regretted that attempts to preserve sphincters in operations for cancer of the rectum ever had been repopularized and that it would in the long run be detrimental to the surgery of cancer of the rectum.

With the almost universal abandonment of sphincter-preserving procedures in lesions below the level of the pelvic peritoneal reflection, with the fact that pull-through operations do not preserve sensation and anal continence for liquids, with the ever-increasing distance, advocated by the supporters of anterior resection, at which it is considered safe to transect the bowel below the lower level of the lesion (starting at 4 to 5 cm. and now 14 to 15 cm.), with the accumulating evidence of local recurrence in follow-up figures and with the high incidence of leakage at the suture line, I find justification for continuing with my doubts as to the soundness of the use of sphincter-preserving operations for cancer of the rectum except in selected cases as a palliative procedure.

605 Commonwealth Ave.

V 1
195

## TIME SPENT BY INTERNISTS ON ADULT HEALTH EDUCATION AND PREVENTIVE MEDICINE

*Harry F. Dowling, M.D.*
*and*
*David Shakow, Ph.D., Chicago*

"Preventive medicine" and "health education" are phrases that are on the tip of everyone's tongue nowadays. Because most of the publicity has been directed to mass methods of prevention and health education, however, little consideration has been given to the amount of time spent by the practitioner of medicine on preventive and health educational procedures in relation to the individual patient; practically no information on this subject is available in the literature. A recent survey by the American Academy of Pediatrics [1] showed that 54% of pediatricians' visits on an average day were for health supervision, and only 43% for the care of sick children, whereas 30% of the services rendered to children by general practitioners were for the supervision of health of well children. Since, as far as we know, no comparable figures are available for adult patients, we decided to make a preliminary survey among internists and general practitioners who deal largely with adults in order to get some notion of the time spent on preventive measures and health education as compared with procedures carried out for diagnosis and treatment. The present paper is a report of this survey.

From the Departments of Medicine and Psychiatry, University of Illinois College of Medicine.

1. Child Health Services and Pediatric Education: Report of the Committee, American Academy of Pediatrics, New York, Commonwealth Fund, 1949, p. 51.

### METHODS AND MATERIALS

Sixty-seven internists and 12 general physicians practicing in metropolitan Washington were selected because they were personally known to one of us as well-trained, conscientious physicians. Prepared forms were sent to them, on which they were asked to indicate the age and sex of every patient seen during an entire week and to classify the time spent in the following categories:

1. Diagnosis and treatment
2. Preventive measures:
   (*a*) Initial or repeat health surveys
   (*b*) Immunizations
   (*c*) Counseling
3. Health education:
   (*a*) In relation to treatment
   (*b*) Preventive

In the explanatory sheets that accompanied the blank forms, curative services (diagnosis and treatment) were defined to include the time spent in diagnosing the illness, in informing the patient regarding the treatment to be followed, and in rendering treatment directly. Examinations carried out when the patient requested an initial physical examination or a follow-up examination without having a specific complaint were considered to be preventive services and were tabulated in the column marked "Initial or Repeat Health Surveys." Counseling was considered to include premarital counseling and counseling in connection with such activities as visits to a cancer detection clinic or participation in a community chest x-ray survey, unless specific therapeutic measures were needed as a result of these visits.

Procedures relating to health education were listed separately from preventive procedures for purposes of tabulation, although there is obviously a considerable amount of overlap. These were divided into (1) health education in relation to therapy and (2) health education of a preventive nature. Health education in relation to therapy was considered to include any explanation given regarding the mechanism underlying the patient's disease or the mode of action of the therapeutic agent beyond the mere statement of the diagnosis and the specific instructions given to the patient to be carried out as part of the treatment of his illness. (The two last-mentioned procedures were included under "Diagnosis and Treatment.") Health education of a preventive nature included instructions or explanations given by the physician on health matters not concerned with an illness or disturbance that he found to be present in the patient at the time of the examination.

The physician was asked to indicate whether the time was spent in his office, in the patient's home, or in the hospital. The data collected involved only his private practice. Time spent on ward patients, in outpatient departments, in industrial medicine, or in government medicine was not included, although several respondents stated that they spent a considerable amount of time in this manner. While the services rendered to patients under 15 years of age were recorded, no data were requested regarding how the physician's time was spent in attending these patients, because it was felt that information of this nature had been obtained in the survey by the American Academy of Pediatrics.

As was to be expected, differences of opinion were encountered regarding the proper column in which certain procedures should be placed. The greatest difficulty seemed to lie in determining what was to be classed as counseling and what as health education. The physician was allowed to choose the particular week during which he recorded the time he spent on the various types of services, the assumption being that he would select a typical week. As a result, the information was recorded for different weeks during the period January to April, 1951.

TABLE 1.—*Number of Services Rendered to Patients Seen by Forty-One Internists During One Week, Arranged According to Age and Sex of the Patient and the Place of Visit*

| Place of Visit | 15 to 29 Yr. | | | | | | 30 to 39 Yr. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Total | | Male | | Female | | Total | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Office | 110 | 68 | 211 | 82 | 321 | 77 | 133 | 80 | 237 | 79 | 370 | 79 |
| Hospital | 27 | 17 | 24 | 9 | 51 | 12 | 18 | 11 | 34 | 11 | 52 | 11 |
| Home | 24 | 15 | 22 | 9 | 46 | 11 | 15 | 9 | 30 | 10 | 45 | 10 |
| Totals | 161 | 100 | 257 | 100 | 418 | 100 | 166 | 100 | 301 | 100 | 467 | 100 |

| Place of Visit | 40 to 49 Yr. | | | | | | 50 to 59 Yr. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Total | | Male | | Female | | Total | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Office | 145 | 72 | 235 | 76 | 380 | 74 | 138 | 61 | 187 | 66 | 325 | 64 |
| Hospital | 36 | 18 | 46 | 14 | 82 | 16 | 62 | 28 | 53 | 19 | 115 | 23 |
| Home | 20 | 10 | 30 | 10 | 50 | 10 | 25 | 11 | 44 | 15 | 69 | 13 |
| Totals | 201 | 100 | 311 | 100 | 512 | 100 | 225 | 100 | 284 | 100 | 509 | 100 |

| Place of Visit | 60 Yr. and Over | | | | | | All Patients | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Total | | Male | | Female | | Total | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Office | 115 | 44 | 186 | 51 | 301 | 48 | 641 | 63 | 1,056 | 69 | 1,697 | 67 |
| Hospital | 96 | 37 | 88 | 24 | 184 | 29 | 289 | 24 | 245 | 16 | 484 | 19 |
| Home | 50 | 19 | 94 | 25 | 144 | 23 | 134 | 13 | 220 | 15 | 354 | 14 |
| Totals | 261 | 100 | 368 | 100 | 629 | 100 | 1,014 | 100 | 1,521 | 100 | 2,535 | 100 |

## RESULTS

Replies were received from 45 physicians, 41 of whom stated that their practice was limited completely or almost entirely to internal medicine. Since replies were received from only four physicians who listed themselves as doing general practice, we have thought it best to include in our tabulations only the data supplied by the 41 internists.

Certain descriptive data regarding the internists who answered the questionnaire follow. The period of time elapsing since graduation from medical school varies from 6 to 30 years (6 to 10 years, 10 internists; 11 to 15 years, 17; 16 to 20 years, 7; and 21 to 30 years, 7). From two to six years have been spent by the members of the group in postgraduate hospital or university training before they entered private practice, 22 having spent four or more years, 13 having spent three years, and 6 having spent two years. Teaching appointments in a medical school were held by 33 (80%); 23 were below assistant professor, and 10 were assistant professor or above. Twenty-seven (66%) held certificates of the American Board of Internal Medicine.

Table 1 gives information regarding the patients seen according to age, sex, and place of visit (office, home, or hospital). It will be noted that the services were fairly

evenly distributed according to age group from 15 years of age and over. A total of 2,535 services were rendered to these patients. It is of interest that only 71 services were rendered by these 41 internists during the same week to children under the age of 15 years. As is to be expected, the younger and middle-aged patients are more often seen in the physician's office, and the older patients, more often in the home or hospital.

The amount of time spent during a week rendering services to private patients varied in the group all the way from 3.8 hours to 57 hours. Approximately half of the internists spent from 20 to 29 hours per week on private patients, the mean for the entire group being 28.1 and the median [2] 26.4 hours. This, of course, does not include travel time, time spent in talking with patients or others over the telephone, or time spent on clerical or administrative matters. The proportion of time spent by the various physicians on diagnosis and treatment varied from 24% to 89%, with a mean of 55%. Preventive measures occupied from 3% to 72% of the time, the average being 26%. Health education occupied from 2% to 37%, the average for the group being 19%.

There was no apparent relation between the total amount of time the physician spent with patients during the week and the proportion of time utilized for diagnosis and treatment. In other words, some of the busiest doctors spent considerable time on preventive procedures and health education and, conversely, physicians who had a small practice sometimes spent a small proportion of time on these activities. Likewise, whether or not the internist has been certified by the American Board of Internal Medicine appears to have had no bearing on the proportion of time spent on the different kinds of services that he rendered to his patients.

The time spent on the various types of services in patients of different age groups is shown in table 2. When all the patients are taken as a group, a mean of 55% of the time was utilized for diagnosis and treatment, 26% for preventive measures (18% health surveys, 1% immunizations, and 7% counseling), and 19% for health education (15% related to treatment and 4% preventive). Although there are variations in the different age groups in the proportionate distribution of these three activities, the differences are not remarkable and, because of the sizes of the groups involved, probably not significant.

There was little difference in the amount of time spent on the various types of services in relation to the sex of the patient. As would be expected, diagnosis and treatment occupied a greater proportion of time in visits by the physician to the home or the hospital than when the patient was seen in the office.

## COMMENT

The present study is, of course, not large enough to be definitive nor geographically widespread enough to be representative. It merely gives some indication of how a small group of well-trained internists in a large metropolitan city distribute their services. It is probable that the selection involved in the group of internists used and the high intellectual and economic level of the population served in the Washington, D. C., area would bias the results in the direction of above-average practice of internal medicine.

It should be emphasized, also, that the subjective estimates as to how much time was spent with a given patient on one type of service rather than another must necessarily be approximate. It seems significant, however, that physicians here recognize that they are spending their time on health education or preventive services. At least this shows that the intention exists to cover this area whether or not the desired goals are actually achieved. It is interesting to note, moreover, that several of the physicians wrote that they had not realized how much time they were spending on preventive measures and on health education until they began filling out the questionnaire.

Our survey cannot be compared directly with the one made by the American Academy of Pediatrics,[1] because our tabulations were made on the basis of the time spent on the various kinds of services whereas theirs was conducted on the basis of the number of visits for the different kinds of services. Since a large proportion of the preventive services for children consists of immunizations, which consume only a short period of time as compared with the longer periods spent on diagnosis and treatment, it is conceivable that the Academy of Pediatrics' investigators might have found that pediatricians spent less than 54% of their time on health supervision.

It should give internists food for thought to realize that only 55% of the time that the present group of in-

TABLE 2.—*Number of Hours (and Percentage of Time) Spent by Internists on Different Types of Services, Arranged According to Age Group of Patients*

| | | | Preventive Measures | | | | | | | | Health Education | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Diagnosis and Treatment | | Initial or Repeat Health Surveys | | Immunizations | | Counseling | | Total | | In Relation to Treatment | | Preventive | | Total | | Grand Totals | |
| All Groups, Yr. | Hours | % | Hours | % | Hours | % | Hours | % | Hours | % | Hours | % | Hours | % | Hours | % | Hours | % |
| 15 to 29 | 97.8 | 55 | 35.0 | 20 | 2.1 | 1 | 13.6 | 8 | 50.7 | 29 | 19.3 | 11 | 8.6 | 5 | 27.9 | 16 | 176.4 | 100 |
| 30 to 39 | 101.3 | 48 | 52.1 | 25 | 2.0 | 1 | 14.3 | 7 | 68.4 | 33 | 31.7 | 15 | 8.1 | 4 | 39.8 | 19 | 209.5 | 100 |
| 40 to 49 | 145.0 | 55 | 54.6 | 21 | 2.3 | 1 | 22.1 | 8 | 79.0 | 30 | 30.8 | 12 | 8.8 | 3 | 39.6 | 15 | 263.6 | 100 |
| 50 to 59 | 128.7 | 59 | 29.8 | 14 | 1.4 | 1 | 14.1 | 6 | 45.3 | 21 | 32.3 | 15 | 11.0 | 5 | 43.3 | 20 | 217.3 | 100 |
| 60 and over | 149.7 | 55 | 37.1 | 14 | 2.9 | 1 | 14.9 | 6 | 54.9 | 21 | 57.0 | 21 | 9.1 | 3 | 66.1 | 24 | 270.7 | 100 |
| Totals | 622.5 | 55 | 208.6 | 18 | 10.7 | 1 | 79.0 | 7 | 298.3 | 26 | 171.1 | 15 | 45.6 | 4 | 216.7 | 19 | 1,137.5 | 100 |

2. Medians were computed for all constants, but, since they did not differ essentially from the means the results will henceforth be given in terms of means.

ternists spent with patients was utilized specifically for diagnosis and treatment and that 45% was utilized for preventive measures and health education. Even if the 15% spent on health education in relation to treatment were added to the time spent on diagnosis and treatment, this would still leave 30% of the internist's time spent on preventive measures, including health education in relation to prevention. Contrast here the time devoted to the study of the diagnosis and treatment of disease with the time devoted to preventive measures and health education during an internist's undergraduate and postgraduate training. It is evident that the amount of time actually spent on diagnosis and therapy in the private practice of internal medicine, as shown in this study, is entirely out of proportion. If more adequate studies of the kind here attempted are carried out and give the same general results, should not internists follow the lead of the pediatricians and allocate more of the time spent by medical students, residents, and fellows in the study of internal medicine to the study of the preventive aspects of medicine?

SUMMARY AND CONCLUSIONS

Data from a questionnaire returned by 41 internists show that 55% of the time spent with patients during a test week is utilized specifically for diagnosis and treatment, 26% for various preventive measures (including health surveys, immunizations, and counseling), and 19% for the education of the patient in health matters. The proportion of time spent on preventive measures and health education bears no relation to the total amount of time spent with patients during the week or to the number of years the physician has been in practice, nor is it related to whether or not the physician is certified by the American Board of Internal Medicine. If further studies bear out the results of the present one, the question is raised whether more time should not be allotted in the undergraduate and postgraduate curriculum to preventive services and health education so that future internists may be better trained to render services that will take up a considerable proportion of their time with patients.

1853 Polk Street.

# RESULTS OF AN INTERNATIONAL TEST IN CHEST ROENTGENOGRAM INTERPRETATION

*L. H. Garland, M.D., San Francisco*
*and*
*A. L. Cochrane, M.B., D.P.H., Cardiff, Wales*

Experienced radiologists and chest specialists have been shown to vary considerably in their interpretation of selected and unselected groups of survey chest films, irrespective of the size of the film.[1] They have been shown to disagree with each other and with themselves to a significant degree on rereading of such films. This phenomenon of experienced reader variation is not confined solely to chest roentgenology; it exists in most fields in which scientific tests have been made, medical, chemical, mathematical, and otherwise.[2] The first reaction of experienced persons on reading reports of this error factor is to comment, "This does not happen to me in my work." However, when such persons submit themselves to critical and competent testing, they soon find that they also are subject to similar variations. The discovery of this fact leads (or has led in our own experience) to more careful analyses of subsequent films, to adoption of methods for reducing the degree of error (by dual reading and so forth), and, therefore, ultimately to increased efficiency in interpretation.[3]

In the last decade, this inter and intraobserver film error has been studied chiefly in one country, the United States, and has been found to be of similar degree in different parts of that country for observers of comparable training and experience.[4] Some two years ago a group of British physicians studied the error problem in a series of 102 roentgenograms of coal miners' chests, and found that their opinions on these films varied "to a remarkable degree, both amongst themselves and to a lesser extent from one occasion to the other."[1b] The number of films considered "certifiable" (positive for pneumoconiosis) on both occasions by the various observers ranged from 5 to 45.

Following this British study, the opportunity arose for an investigation of reader consistency by two groups of workers, one in Great Britain and one in the United States, on a series of chest films selected for study by the British workers. This paper is a report of the results of this investigation.

## MATERIAL

The material was selected as follows. The Medical Research Council of Great Britain sponsors a pneumonoconiosis research unit, which is attached to the Llandough Hospital in Cardiff, South Wales, under the direction of C. M. Fletcher, M.D. Dr. Fletcher and associates, including one of us (A. L. C.), are engaged in studies on tuberculosilicosis and other chest problems. As part of a study on early or minimal tuberculosis in non-

From the Stanford University Medical School (Dr. Garland), and Medical Research Council, Pneumoconiosis Unit, Cardiff, Wales (Dr. Cochrane).

A companion paper has been submitted to the *Lancet*. Both papers represent joint progress reports on research efforts of various radiologists and chest specialists whose names appear in the text and bibliography.

1. (*a*) Birkelo, C. C., and others: Tuberculosis Case Finding: Comparison of Effectiveness of Various Roentgenographic and Photofluorographic Methods, J. A. M. A. **133**: 359 (Feb. 8) 1947. (*b*) Fletcher, C. M., and Oldham, P. D.: Problem of Consistent Radiological Diagnosis in Coalminers' Pneumoconiosis: Experimental Study, Brit. J. Indus. Med. **6**: 168, 1949. (*c*) Garland, L. H.: Scientific Evaluation of Diagnostic Procedures: Thirty-fourth Annual Meeting of Radiological Society of North America, Radiology **52**: 309, 1949. (*d*) Garland, L. H.: Conditions to be Differentiated in Roentgen Diagnosis of Pulmonary Tuberculosis, Ann. Int. Med. **29**: 878, 1948. (*e*) Newell, R. R., and others: Studies on Chest Interpretation, to be published.

2. Garland.[1d] Pearson, K.: Mathematical Theory of Error of Judgment, with Special Reference to the Personal Equation, Series B, Tr. Roy. Soc. Phil. **198**: 235, 1902.

3. Yerushalmy, J.; Harkness, J. T.; Cope, J. H., and Kennedy, B. R.: Role of Dual Reading in Mass Radiography, Am. Rev. Tuberc. **61**: 443, 1950.

mining persons, they arranged for dual readings by six observers on a set of 14 by 17 in. (36 by 43 cm.) survey chest films loaned by the Welsh National Memorial Association. This association was asked to provide about 100 films, of which between 5 and 30 should show some signs of reinfection type tuberculosis. Dr. Wade, a member of the research unit, selected 89 of the 100 films as technically adequate and as containing the desired proportion of cases of "minimal" reinfection disease. The six British readers were asked to indicate their interpretation on a prepared form. Readings were carried out, under supervision, on two separate occasions, and the results were analyzed statistically by Mr. P. D. Oldham of Cardiff.

The 89 films were then mailed to a chest radiological research committee in San Francisco.[5] The three members of the committee interpreted the films independently on two separate occasions, using the forms forwarded from Wales. Their readings were then analyzed statistically by Prof. J. Yerushalmy of Berkeley, who prepared the tables published here.

Dr. C. M. Fletcher of Great Britain visited the United States research committee in San Francisco in May, 1950, and discussed the results of the British workers to date. Some months later, one of us (L. H. G.) visited the British group in Wales, and reviewed both sets of results; a small group of controversial films were examined by both of us in conference with Dr. Fletcher, and points of disagreement were discussed and summarized.

TABLE 1.—*Distribution of Films by British Readers According to Classifications[6] Used in This Test*

| | | T.B. Positive | | | | | |
|---|---|---|---|---|---|---|---|
| | | | No. Inactive | | | | |
| Reader | Reading | No. Active | Clinically Significant | Not Clinically Significant | Total | Total | T.B. Negative |
| A | 1st | 11 | 11 | 12 | 23 | 39 | 55 |
| | 2nd | 12 | 6 | 10 | 16 | 28 | 61 |
| B | 1st | 19 | 3 | 2 | 5 | 24 | 65 |
| | 2nd | 18 | 5 | 6 | 11 | 29 | 60 |
| C | 1st | 17 | 4 | 7 | 11 | 28 | 61 |
| | 2nd | 17 | 4 | 8 | 12 | 29 | 60 |
| D | 1st | 20 | 5 | 2 | 7 | 27 | 62 |
| | 2nd | 20 | 7 | 2 | 9 | 29 | 60 |
| E | 1st | 5 | 13 | 3 | 16 | 21 | 68 |
| | 2nd | 5 | 14 | 2 | 16 | 21 | 68 |
| F | 1st | 11 | 9 | 3 | 12 | 23 | 66 |
| | 2nd | 8 | 9 | 7 | 16 | 24 | 65 |
| | Mean | 13.6 | 7.5 | 5.3 | 12.8 | 26.4 | 62.6 |
| | Range | 5-20 | 3-14 | 2-12 | 5-23 | 21-34 | 55-68 |

Finally, the various statistical analyses were studied by each of the two statistical advisers, and agreement was reached on the basic conclusions presented in this paper.

*Comments on the Report Form.*—The particular report form or sheet used in these two tests was one evolved early in 1949 by the British research group. It contained columns for the following entries: (1) x-ray film number, (2) "tuberculosis" absent, (3) "tuberculosis" present, (4) process active, (5) process inactive, and (6) process of clinical significance.[6] British readers were asked to use only simple check marks and to avoid the use of queries or comments. A film might show shadows interpreted as "tuberculosis" present, with the process apparently "inactive" yet probably of "clinical significance." In such event, columns 3, 5 and 6 would carry check marks.

American readers did not receive specific instructions as to the use of the column "process of clinical significance," and therefore sometimes recorded an abnormal cardiovascular shadow in this column. Allowance was made for this slight difference in usage of the report forms in their final analyses.

*Composition of Reader Panels.*—The British group consisted of the following members: L. R. West, M.D., M.R.C.P., consultant physician, Sully Hospital, South Wales; K. J. Mann, M.D., M.R.C.P., D.P.H., member of the scientific staff of the Medical Research Council; A. L. Cochrane, M.A., M.B., B.Ch., D.P.H., member of the Scientific Staff of the Medical Research Council; V. H. Springett, M.D., Prophit Scholar, Royal College of Physicians of London; I. Davies, M.D., M.R.C.P., D.P.H., Member of the Scientific Staff of the Medical Research Council; and T. W. Davies, B.Sc., M.B., B.Ch., D.P.H., Consultant Chest Physician to South Wales Regional Hospital Board.

The American group consisted of three radiologists: L. H. Garland, M.D., clinical professor of radiology,

TABLE 2.—*Average and Range of "Agreement" and "Disagreement" Among British Readers*

| | Between Pairs of Readers (Inter-Individual) | Between Readings of Individuals (Intra-Individual) |
|---|---|---|
| Agreement | | |
| On presence of T.B. | 22.7 (21-27) | 24.5 (21-27) |
| On absence of T.B. | 59.4 (53-66) | 60.7 (55-68) |
| Disagreement | | |
| On presence of T.B. | 6.9 (2-13) | 3.8 (0-8) |
| As percentage of all films | 7.7 (2.2-14.6) | 4.3 (0-9.0) |
| As percentage of films called positive at least once | 23.2 (8.7-38.2) | 13.5 (0-22.9) |

TABLE 3.—*Average and Range of "Agreement" and "Disagreement" Among British Readers on Activity in Films in Which T. B. Is Agreed to Be Present*

| | Between Pairs of Readers (Inter-individual) | Between Readings of Individuals (Intra-individual) |
|---|---|---|
| Agreement | | |
| On presence of T.B. | 22.7 (21-27) | 24.5 (21-27) |
| On activity of T.B. | 8.9 (3-17) | 12.0 (4-18) |
| On inactivity of T.B. | 4.9 (2-10) | 9.8 (5-15) |
| Disagreement | | |
| On presence of T.B. | 8.9 (4-15) | 2.7 (1-5) |
| As percentage of no. agreed to show T.B. | 39.3 (17.4-71.4) | 10.9 (4.2-22.7) |
| As to active T.B. vs. T.B. absent | 0.9 (0-2) | 0.5 (0-1) |

4. Error may be measured in different ways. The error may be recorded as the percentage disagreement based on all films read, or the percentage disagreement based on those films called "positive" by a majority of readers, or on those films called "negative" by a majority of readers. The percentage disagreement based on all films read has been shown in one study to be about 16% between individual readers, and 8% for each individual himself on rereading.[1c] Interindividual disagreement based on films called "positive" by a majority of readers has a wide range, and was about 30% in certain studies; this means that 3 out of 10 positive cases were missed by an observer. Disagreement based on films called "negative" by a majority of readers also varied, but in actual survey studies was found to be about 1%; this means that 1 out of 100 negative cases would be over-read or called positive. Expressed briefly, there was about 30% under-reading of positive films, and 1% over-reading of negative films.

5. The committee was composed of Earl Miller, M.D., and Merrell Sisson, M.D., and one of us (L. H. G.).

6. Incidentally, Fletcher and associates are now using a revised classification as follows: "T.B. absent" (including healed primary complex); "T.B. present, active or clinically significant"; and "T.B. present, inactive, not clinically significant." The abbreviation T.B. indicates a roentgen shadow suggestive of an inflammatory pulmonary disease, probably tuberculous in origin. It is employed merely for the sake of brevity. Neither the British nor the American workers in this study believe that the bacteriological nature of the disease process can be positively determined from a roentgenogram.

Stanford University; E. R. Miller, M.D., professor of radiology, University of California; and M. A. Sisson, M.D., assistant clinical professor of radiology, Stanford University.

## RESULTS

*British Research Group.*—There were six readers in the British group. These readers interpreted from 21 to 34 of the 89 films as positive for tuberculosis, and from 5 to 20 of these films as demonstrating active lesions. The total number called negative ranged from 55 to 68 (table 1).

The inter and intraindividual disagreement measured respectively 7.7% and 4.3% on all 89 readings. If only the films called positive are considered, these percentages were 23 and 13%, respectively. Table 2 is a summary of the findings of the British workers in this connection. Evaluation of activity showed the expected interindividual range and a rather good, i. e., small, intraindividual range (table 3).

TABLE 4.—*Distribution of Films by American Readers According to the Classifications* Used in This Test*

| | | | T.B. Positive | | | | |
|---|---|---|---|---|---|---|---|
| | | | Inactive | | | | |
| Reader | Reading | Active | Clinically Significant | Not Clinically Significant | Total | Total | T.B. Negative |
| J | 1st | 20 | 3 | 12 | 15 | 35 | 54 |
| | 2nd | 17 | 6 | 8 | 14 | 31 | 58 |
| K | 1st | 26 | .. | 9 | 9 | 35 | 54 |
| | 2nd | 23 | 1 | 9 | 10 | 33 | 56 |
| L | 1st | 18 | ..† | .. | 10 | 28 | 61 |
| | 2nd | 20 | .. | .. | 10 | 30 | 59 |
| | Mean | 20.7 | 2.5* | 9.5† | 11.3 | 32.0 | 57.0 |
| | Range | 17-26 | 0-6 | 8-12 | 9-15 | 28-35 | 54-61 |

* Reader L did not indicate clinical significance.
† Excluding reader L.

*American Research Group.*—There were three readers, all radiologists, in the American Group. The results of their readings are tabulated in three tables constructed similarly to those prepared for the British workers. The tables are self-explanatory and are reproduced here (tables 4, 5, and 6).

## COMPARISON OF RESULTS

An analysis of the two sets of tables reveals the following facts: British readers called a smaller portion of the films positive than did American readers (the mean being 28.9 positives for the British and 32.0 for the Americans). Similarly, the British called a mean of 13.6 "active T. B." and the Americans 20.7 in this category. However, more "inactive but clinically significant" cases were reported by the British than by the Americans. As for the "T. B. negative" cases, the mean number found by the British readers was 62.6 as compared with 57.0 for the Americans.

In conferences between representatives of the two groups held first in San Francisco and subsequently in Cardiff, it became apparent that American readers tended to stress minimal abnormal shadows to a greater extent than British readers. This may be due to the fact that the three American readers previously had conducted extensive studies on minimal tuberculous pulmonary lesions, and had been "alerted" to the potential significance of very small and faint densities, especially in surveys of groups such as nurses and medical students. Conversely, in a comparable but unpublished joint study of silicosis, the British readers were prone to interpret minimal roentgen changes as "stage 1 pneumoconiosis," while the American readers tended to report such films as "negative, within normal limits." In this instance, the British workers were men who had been conducting extensive surveys on coal miners, and therefore had been "alerted" to minimal parenchymal alterations that sometimes were later found to have been the precursors of definite pneumoconiosis.

TABLE 5.—*Average and Range of "Agreement" and "Disagreement" by American Readers on Presence of T. B.*

| | Between Pairs of Readers (Interindividual) | Between Readings of Individuals (Intraindividual) |
|---|---|---|
| Agreement | | |
| On presence of T.B. | 26.7 (24-32) | 29.7 (27-31) |
| On absence of T.B. | 50.3 (50-51) | 54.7 (52-58) |
| Disagreement | | |
| On presence of T.B. | 12.0 (6-15) | 4.7 (4-6) |
| As percentage of all films | 13.5 (6.7-16.9) | 5.2 (4.5-6.7) |
| As percentage of films called positive at least once | 31.9 (15.8-38.5) | 13.6 (11.4-16.2) |

The mean number of interindividual disagreements on "T. B. present" for the British readers in their first sets of readings was 7.7%, taking all 89 films into consideration, or 23.2% if the films called "T. B. negative" on both readings are eliminated. These figures are slightly lower than those obtained on American readings. The intraindividual comparisons, however, are about the same as were found for the Americans, with a mean of 3.8 disagreements or 4.3% based on 89 readings, and 13.5% based on only those films called "T. B. positive" by at least one reader.

TABLE 6.—*Average and Range of "Agreement" and "Disagreement" by American Readers on Activity in Films in Which T. B. Is Agreed to Be Present*

| | Between Pairs of Readers (Interindividual) | Between Readings of Individuals (Intraindividual) |
|---|---|---|
| Agreement | | |
| On presence of T.B. | 26.7 (24-32) | 29.7 (27-31) |
| On activity of T.B. | 17.3 (16-20) | 19.0 (17-23) |
| On inactivity of T.B. | 3.7 (1-7) | 8.7 (7-12) |
| Disagreement | | |
| On presence of T.B. | 5.7 (3-7) | 2.0 (1-3) |
| As percentage of no. agreed to show T.B. | 21.2 (15.6-29.2) | 6.7 (3.2-11.1) |
| Active T.B. vs. T.B. absent | 2.3 (1-5) | 1.3 (1-2) |

On the other hand, interindividual disagreement on activity (first readings only, tables 3 and 6), although surprisingly low, was higher for the British than for the American readers. The mean number of disagreements on activity was 8.9, or 39.3%, for the British, as compared with 5.7 or 21.2% on the American first readings. The intraindividual disagreements were also somewhat greater for the British, with a mean of 2.7 or 10.9% for

the British, as compared with 2.0 or 6.7% for the Americans. There were fewer complete disagreements by the British readers (that is, one reader reporting "active T. B." while the others reported "negative for T. B."); the average was 0.9 for such disagreements for pairs of readers and 0.5 comparing each reader with himself.

In calculating the "misses" by various British readers of films called "T. B. positive" by one reader, it is evident that films called "active T. B." are less likely to be missed than those called "inactive T. B.," but there is no clear-cut advantage of films called "clinically significant" over those called "not clinically significant" in the British readings; some advantage in this respect was found in the American readings.

In cross-comparison between British and American readers, using first readings only, it was found that of 52 films called "T. B. negative" unanimously by the British, 42 were also called negative unanimously by the American readers; 6 were called "T. B. positive" by one American reader, and 4 were called "T. B. positive" by two American readers. The six films with apparent major disagreement were subsequently studied at joint conference at Cardiff, with the results outlined in table 7. In five cases there proved to be no major disagreement; in one case there was disagreement as a result of a rather difficult lesion.

TABLE 7.—*Analysis of Films on Which British and American Readers Disagreed*

| Film No. | Readings During Trial (First and Second Occasions) | | Comments at Joint Conference * | Conclusion |
|---|---|---|---|---|
| | British Readers | American Readers | | |
| 1 | 12 T.B. negative † | 3 T.B. negative<br>3 T.B. positive, inactive | Questionable small scar at right first space, laterally (A). Negative (B). | Understandable difference of opinion on significance of a small opacity. No major disagreement. |
| 2 | 12 T.B. negative | 2 T.B. negative<br>4 T.B. positive, inactive | Questionable density right first space, laterally (A). Negative (B). | No major disagreement. |
| 3 and 4 | 12 T.B. negative | 2 T.B. negative<br>4 T.B. positive, inactive (calcified hilar nodes) | Calcified nodes (A). Negative (B). | No major disagreement. American readers coded the nodes; British did not. |
| 5 | 6 T.B. negative<br>3 T.B. positive, active<br>2 T.B. positive, inactive, but clinically significant<br>1 T.B. positive, inactive, not clinically significant | 4 T.B. negative<br>1 T.B. positive, active<br>1 T.B. positive, inactive | Faint opacity left first space, possibly active (A). Possible lesion (B). | Difficult case with probable minimal lesion and inevitable difference of opinion amongst different observers. Both groups of readers diverged; no significant international disagreement. |
| 6 | 9 T.B. negative<br>2 T.B. positive, active<br>1 T.B. positive, inactive, but clinically significant | 1 T.B. negative<br>2 T.B. positive<br>2 T.B. positive, inactive, but clinically significant<br>1 T.B. positive, inactive and not significant | Lesion, R second rib, dense and probably obsolete; adjacent lesion right 2nd space, soft (active) (A). Negative except for healed primary (B). | Difficult case with small soft lesion overshadowed by adjacent small, dense one. Subsequent review by independent British consultant reported "positive and significant." |

* A represents an American reader. B represents a British reader.
† That is, of 12 readings, all were recorded as negative.

## SUMMARY

A set of 89 selected 14 by 17 in. chest films were read independently twice by each of six British and three American observers. The amount of interindividual and intraindividual disagreement was significant, and was of approximately similar magnitude on each side of the Atlantic. Of the entire 89 films, the number of "positives" selected by the different readers varied from 21 to 34 for the British, and from 28 to 35 for the Americans. Of those interpreted as active, the British range was 5 to 20, and the American 17 to 26.

The percentage disagreement between any pair of readers on interpreting a film as positive was 7.7% for the entire 89 films, or 23.2% of the films called positive, in the case of British readers. The corresponding figures for the American readers were 13.5% and 31.0%. Of 21 films interpreted as "T. B. positive" unanimously by the British readers, 20 were called positive unanimously by the American readers; in the remaining case, two of the American readers interpreted the film as positive. In other words, these films showed lesions of an obvious type, upon which agreement was easy. There were 24 cases interpreted as positive unanimously by the American readers. The following are the British interpretations of the four cases "added" by the Americans: one film had five positive readings; two had three positive readings; and one had two positive readings (film no. 6, table 7). The disagreement on activity in those films interpreted as positive was as follows: interindividual, 39.3% British, 21.2% American; and intraindividual, 10.9% British, 6.7% American. Finally, the mean degree of personal inconsistency in seeing a lesion was for the British, 4.3% of the 89 films, or 13.5% of the films called positive. For the Americans, the corresponding figures were 5.2% and 13.6%, respectively.[7]

## CONCLUSION

Observer error in the field of chest roentgenographic interpretation is a significant problem in more than one country. Its recognition is important, and should lead to the development of methods (such as dual reading) by which it may be reduced.

450 Sutter St. (Dr. Garland).

7. Since completion of this international trial, we have been notified by Professor Groth-Petersen of Denmark that he found individual variations of the same order of magnitude in Danish tests. He writes, "We knew the result of similar American investigations, but to tell the truth, we had been somewhat skeptical as regards the universal validity of these . . . . . The individual reader (in the Danish tests) has seen an average of 68 "true positive" findings per 100, exactly as in the American investigations (Groth-Petersen, E.; Løvgreen, A., and Thilleman, J.: On the Reliability of the Reading of Photofluorograms and the Value of Dual Reading, Acta tuberc. Scandinav. **26**: 13, 1952).

---

**Intestinal Amebiasis.**—Intestinal amebiasis is prevalent in at least 10% of the population of this country. The distribution of the infection is determined by conditions of local sanitation rather than by climate. The prevalence is necessarily greater in rural than in urban populations, and the great increase in foreign travel exposes large number of individuals to greater risk of infection than they would normally encounter in the United States. —Thomas T. Mackie, M.D., Chronic Intestinal Amebiasis, *The Journal of the Michigan State Medical Society*, April, 1952.

# HEAT SENSITIVITY DUE TO AUTONOMIC DRUGS

*Robert E. Litman, M.D., Los Angeles*

Sweating is the essential mechanism by which the human body protects itself against the injurious effects of severely elevated environmental temperatures. The experience of the armed forces has shown that in desert and tropical climates a decrease in the ability to sweat is associated with a syndrome of weakness, lassitude, and increased heat sensitivity.[1] Under such conditions a complete failure of sweating is followed inevitably by hyperpyrexia, which may be fatal. In many American cities heat stroke becomes an important problem during prolonged midsummer "heat waves." Almost all patients admitted to city hospitals because of hyperpyrexia give a history of a sudden cessation of sweating immediately preceding their collapse.[2] Apparently the essential feature of heat stroke is an acute derangement of the sweating mechanism. Authorities agree that any disease of the central nervous system gravely increases susceptibility to heat pyrexia. Such predisposing factors as extremes of age, alcoholism, and chronic neurological disorders have long been recognized. It seems likely that drugs that tend to inhibit sweating also increase sensitivity to heat. This was pointed out in 1920 by Wilcox, who warned against the use of atropine by military personnel stationed in the Middle East, because of its anhidrotic action.[3] For years atropine and related alkaloids have been used to ameliorate the symptoms of Parkinsonism. During one therapeutic phase, now past, the dosage of these potent drugs was pushed higher and higher (sometimes to 50 mg. of atropine daily), so that maximal benefit might be obtained. Under such circumstances hyperpyrexia would develop in whole wards of patients simultaneously in hot weather.[4] Reports of large numbers of patients treated with mixtures of belladonna alkaloids, even in moderate doses, often include a reference to severe or fatal cases of heat stroke complicating therapy.[5] Attempts have been made to discover drugs that duplicate the favorable antispasmodic action of atropine without the distressing side-effects, such as inhibition of secretions. Two preparations that have been recommended as therapeutically beneficial with minimal side effects are 3-(1-piperidyl)-1-phenyl-1-cyclohephyl-1-propanol (artane*) hydrochloride, a synthetic antispasmodic, and diphenhydramine (benadryl*) hydrochloride, an antihistaminic drug. I wish to report observations on the effect of these drugs on sweating in patients afflicted with Parkinsonism, as compared to the effect of rabellon,* a mixture of belladonna alkaloids.

Sweating was induced in the patients by heating them under electric bakers according to the method of List and Peet.[6] Moisture was rendered clearly visible by the starch iodine method of Minor, and the rate and amount of sweating were carefully recorded. With constant environmental conditions, test-retest consistency at one week intervals was satisfactory. (This had been determined previously on normal subjects.) Under observation were 19 patients, all ambulatory, all males, and all suffering from Parkinson's disease. All but three were between the ages of 52 and 65. The patients were tested repeatedly with and without medication, until a total of 62 tests had been performed. It became evident that, in order to evaluate the actions of the drugs properly, the patients must be considered in two categories. Group 1 comprised 15 patients with a variety of autonomic disorders but with no hypohidrosis. In this group, on the contrary, hypersecretion was a great nuisance to many of the patients, who welcomed any decrease in sweating induced by medication. Group 2 included four patients who had mild to severe hypohidrosis even without medication. The observations are tabulated in the table.

*Anhidrotic Effect of Drugs on Patients with Parkinsonism**

| Drug | Dose per Day | Group 1, 15 Patients | Group 2, 4 Patients |
|---|---|---|---|
| Rabellon® | Less than 3.0 mg. | + + + 0 0 | + + |
| Rabellon® | More than 3.0 mg. | + + + + + 0 | + |
| Artane® | Less than 20 mg. | + 0 0 0 0 | + |
| Artane® | More than 25 mg. | + + + + 0 0 | + |
| Diphenhydramine | 200-250 mg. | + + 0 0 0 0 | + + |
| Diphenhydramine | 50 mg. (IV) | + + | + |

* + indicates a definite reduction in sweating, and 0 indicates no substantial change in sweating.

In the patients of group 1, both artane* and diphenhydramine tended to inhibit sweating, although the action was less marked than that of rabellon.* The anhidrotic effect paralleled the decrease in salivary secretion, although reduced sweating often appeared before the patient complained of dryness of the mouth. In the patients of group 2, all of the drugs caused a drastic reduction in sweating, frequently associated with alarming hyperthermic responses to the heat test.

## REPORT OF CASES

CASE 1.—A 56-year-old farmer had had influenza in 1925, followed by progressive weakness and rigidity. An examination of the patient in 1950 revealed irregular pupils, thick speech, immobile facial expression, much rigidity, and slight tremor. He was also mildly constipated, and urinated four times nightly. The patient stated that he now sweated less than he had before and was fatigued, depressed, and uncomfortable during hot weather. In testing without drugs, he spent 30 minutes under the electric bakers without great discomfort, though his sweating was definitely less than normal. When he was receiving artane,* 30 mg. daily, sweating was almost absent. The heating test was discontinued after 26 minutes because of tachycardia (pulse rate 140), the patient's complaint of weakness and headache, and a rise in rectal temperature to 101.6 F (38.7 C).

From the Division of Neurology of the University of Minnesota Medical School.

1. Wolkin, J.; Goodman, J. I., and Kelley, W. E.: Failure of the Sweat Mechanism in the Desert: Thermogenic Anhidrosis, J. A. M. A. **124**: 478 (Feb. 19) 1944. Ladell, W. S. S.: Effects on Man of High Temperature, with Special Reference to Work of Heat Physiology Team at National Hospital, Brit. M. Bull. **5**: 5, 1947.

2. Ferris, E. B., Jr.; Blankenhorn, M. A.; Robinson, H. W., and Cullen, G. E.: Heat Stroke: Clinical and Chemical Observations on 44 Cases, J. Clin. Investigation **17**: 249, 1938.

3. Wilcox, W. H.: The Nature, Prevention, and Treatment of Heat Hyperpyrexia, Brit. Med. J. **1**: 392, 1920.

4. Jewett, S. P.; Rosow, H. M., and Pumpian-Mindlin, E.: High Dosage Atropine Therapy in Chronic Encephalitic Parkinsonism, Am. J. M. Sc. **195**: 809, 1938. Hall, A. J.: The Results of High Atropine Dosage in Chronic Epidemic Encephalitis, with Comments, Brit. M. J. **1**: 795, 1937.

5. Price, J. C., and Merritt, H. H.: The Treatment of Parkinsonism: Results Obtained with Wine of Bulgarian Belladonna and Alkaloids of U. S. P. Belladonna, J. A. M. A. **117**: 335 (Aug. 2) 1941. Benda, C. E., and Cobb, S.: On the Pathogenesis of Paralysis Agitans (Parkinson's Disease), Medicine **21**: 95, 1942.

6. List, C. F., and Peet, M. M.: Sweat Secretion in Man: Sweating Responses in Normal Persons, Arch. Neurol. & Psychiat. **39**: 1228 (June) 1938.

CASE 2.—A 58-year-old postmaster had had influenza in 1919. His present illness began in 1927 with weakness, vague pains, and gradually increasing stiffness. He was also suffering from constipation and increased frequency of urination. Examination demonstrated an immobile facial expression, a propulsive gait, and a weak voice. Sweating, though sluggish, was still in the low normal range without medication. After he was given 50 mg. of benadryl® intravenously over a period of five minutes, he had little or no sweating. The heat test was discontinued after 20 minutes because the patient's rectal temperature reached 101.5 F (38.6 C).

COMMENT

It is evident that both artane® and diphenhydramine tend to inhibit sweating, which is in accordance with previous experience with these drugs. In pharmacologic studies on animals, Cunningham's group found that artane,® in comparison with atropine, has one-third as great a mydriatic action and one-eighth as much antisialogogic potency.[7] Diphenhydramine has structural similarities to atropine,[8] and toxic hyperpyrexia due to diphenhydramine has occurred with symptoms duplicating those of atropine poisoning.[9]

The mechanism of the antisecretory activity is by no means clear, even with respect to atropine, a drug that has been studied extensively. Peripherally, atropine blocks the response of cholinergic end organs, and it also has a very important but poorly understood central action. Because the sweat glands not only are vulnerable to cholinergic blocking drugs but also are inhibited by agents that interrupt the sympathetic nerves and ganglions, decreased sweating may result from the action of N,N-dibenzyl-β-chloroethylamine (dibenamine®), tetraethyl ammonium (etamon®) chloride, methantheline (banthine®) bromide, and 2-benzyl-2-imidazoline (priscoline®) hydrochloride. Various other antispasmodics and possibly several of the antihistaminics may have the same anhidrotic action.

Drugs that tend to inhibit sweating should be dispensed with care during hot weather. This warning applies especially to patients with disease of the central nervous system, the aged, alcoholics, and the chronically ill. It also applies to ambulatory persons who may have to do heavy work in a hot climate. Further, the anhidrotic effect of atropine-like drugs is greatest in persons in whom there already exists some derangement of sweating.

CONCLUSIONS

Under circumstances of elevated environmental temperatures, sweating protects the body against hyperthermia. Many recently developed drugs tend to inhibit sweating. Such antispasmodic and antihistaminic preparations should be used with caution in patients exposed to extremes of heat; otherwise heat stroke may result.

7960 Fareholm Dr.

7. Cunningham, R. W., and others: The Pharmacology of 3-(N-Piperidyl)-1 Phenyl-1-Cyclo-Hexyl-1-Propanol HCL (Artane) and Related Compounds: New Antispasmodic Agents, J. Pharmacol. & Exper. Therap. **96**: 151, 1949.

8. Gair, D. S., and Ducey, J.: Chemical Structure of Substances Effective in Treatment of Parkinsonism, Arch. Int. Med. **85**: 284 (Feb.) 1950.

9. Sachs, B. A.: The Toxicity of Benadryl: Report of Case and Review of Literature, Ann. Int. Med. **29**: 135, 1948.

V 14
1952

# RHEUMATIC FEVER PROPHYLAXIS

## A COMMUNITY PROGRAM THROUGH THE PRIVATE PHYSICIAN

*Mary Alice Smith, M.D., Anton R. Fried, M.D., Ernest M. Morris, M.D., Lewis C. Robbins, M.D.*
*and*
*William J. Zukel, M.D., Newton, Mass.*

A child is a rheumatic child because of hereditary and environmental factors. He cannot be genetically altered, and seldom can his environment be altered to approach the ideal. He is well but possesses a peculiar vulnerability and tissue reactivity to certain streptococcic infections. If the infection could be prevented or stopped before tissue reactivity begins, he would remain normal.

The rheumatic child is hidden among our national citizenry. His first streptococcic infection may or may not bring him in contact with his family physician, who may give treatment to prevent a possible attack of rheumatic fever. Once rheumatic fever has developed, subsequent devastating bouts are likely to occur. It then becomes the physician's responsibility to establish all possible safeguards before, during, and after rheumatic episodes. To discharge this responsibility, many private physicians of Newton, Mass., began daily oral administration of penicillin to rheumatic children.

It is the purpose of this paper to show the development of a rheumatic fever prevention program in which the private physician plays the major role. The program shortened the time between the discovery that penicillin should prevent rheumatic fever attacks and the widespread application of this knowledge in Newton, a community of 85,000 population.

DEVELOPMENT OF A COMMUNITY PROGRAM

Three years ago, the Public Health Service, with the cooperation of the Massachusetts and Newton health departments, and with the endorsement of the Newton Medical Club, established the Newton Heart Demonstration Program. At the request of the medical club, a committee of six staff members of Newton-Wellesley Hospital was organized to act in an advisory capacity for the heart program.

The need for rheumatic fever prophylaxis was first considered by the Cardiac Program Committee (the local advisory group for the Newton Heart Demonstration

Medical Officer in Charge, Newton Heart Demonstration Program, Public Health Service (Dr. Smith); Chairman, Subcommittee on Rheumatic Fever, Cardiac Program Committee, and Former Chief of Medical Service, Newton-Wellesley Hospital (Dr. Fried); Director of Public Health, Newton Health Department (Dr. Morris); and Former Medical Officer in Charge, Newton Heart Demonstration Program, Public Health Service (Drs. Robbins and Zukel).

Program) at its regular monthly meeting in December, 1949. There was some question at first as to how much rheumatic fever there was in Newton. A later telephone survey of family physicians revealed that 45 of the 80 patients listed in the Handicapped Children's File of the Newton Health Department were known to have had an onset or a recurrence of their disease since 1945. Only a very few of these patients had received antibiotics to prevent further attacks. Acting on this information, the Cardiac Program Committee sought from Dr. T. Duckett Jones [1] an authoritative schedule for rheumatic fever prophylaxis; through Dr. Jones, Dr. Benedict Massell [2] provided us with the schedule shown in table 1.

Briefly, to prevent a recurrence, the schedule recommended that a patient who had had an attack of rheumatic fever within five years should take three 100,000 unit tablets of penicillin orally each day, at least three-quarters of an hour before a meal or two hours after meals; a person having a suspected streptococcic infection should receive large doses of penicillin for 10 days, and, if he is a member of a family in which there is rheumatic fever, all other persons should simultaneously receive prophylactic doses of three 100,000 unit tablets orally each day for 10 days.

On receipt of the schedule, our next problem was to disseminate this information. Fortunately, a regular "teaching session" of the Newton Postgraduate Heart Institute, to which all Newton physicians are invited, could be turned over to the chairman of the Rheumatic Fever Subcommittee of the Cardiac Program Committee. He introduced Drs. Jones and Massell, who discussed the need for rheumatic fever prophylaxis and the use of the penicillin schedule. At this meeting, the doctors expressed many opinions, for example: 1. Penicillin is too expensive for such widespread use. 2. If all patients presenting the suggested criteria for possible streptococcic infections were to receive penicillin, far more would be treated than would be justified by the prevention of rheumatic fever, a relatively infrequent disease. 3. Many patients do not bother to come to the doctor for a mere sore throat, so that treating streptococcic infections early is difficult. These points appeared to be valid and influenced the planning of a practical program.

## LOW COST PENICILLIN

As a result of this meeting, a new interest in the problem was developed. To overcome one of the formidable barriers, low cost penicillin (and free penicillin for those unable to pay) was made available for Newton patients with rheumatic fever and their families through the Newton Health Department.[3] All doctors practicing in Newton received a schedule and an announcement that their Newton patients with rheumatic fever could get this low cost penicillin on their prescription.

## ATTEMPTS TO HAVE THE SCHEDULE USED

How best to acquaint and obtain the cooperation of some 100 physicians practicing in Newton required considerable thought. It was felt that doctor cooperation could best be assured by private letters, telephone calls, and visits by a heart program medical officer. Obviously the schedule had to be prescribed by the physician, but, before this could be done, it was vitally important to get the patients to go to their doctors. Since it was felt the doctors might hesitate to call in their patients themselves, the Director of Public Health sent directive letters to all patients listed in the Handicapped Children's File.

As an aid for making accurate diagnoses, all the physicians received a reprint of an article by Dr. T. Duckett Jones.[4] This article suggests that (1) carditis, arthralgia, chorea, subcutaneous nodules, and a history of a previous attack be considered as major manifestations of the disease; (2) fever, abdominal pain, precordial pain, rashes (erythema marginatum), epistaxis, pulmonary findings, and laboratory findings (microcytic anemia, leukocytosis, and increased sedimentation rate) be considered minor manifestations; (3) the diagnosis be considered definite when two major, or one major and two minor, manifestations were present; and (4) the diagnosis be considered probable when fewer than these criteria were present and the attending physician felt it should be considered rheumatic fever.

TABLE 1.—*Penicillin Prophylaxis Schedule for Rheumatic Fever*

| Persons Needing Protection | Recommended Schedule |
|---|---|
| **The Rheumatic Fever Family** | |
| 1. The patient with inactive rheumatic fever | Continuous daily prophylactic therapy for five years from date of last attack (course A) * |
| 2. (*a*) Any other member of family (parent or sibling) with suspected † or proved streptococcic infection, and | Course B for 10 days |
| (*b*) Simultaneously all other members of family | Course A for 10 days |
| Advisable but probably not always possible | |
| **The Nonrheumatic Family** | |
| 1. Any member with suspected or proved streptococcic infection | Course B for 10 days |
| 2. Any others exposed to streptococcic infection | Course A for 10 days (so that no one in the family will continue to carry the organism) |

Penicillin course A: (prophylactic treatment) 1 tablet penicillin, 100,000 units, three times daily, orally, on arising, one hour before lunch, and at bedtime

Penicillin course B: (for treatment of streptococcic infections) 2 tablets (100,000 units each) five times a day for five days, then 3 tablets (100,000 units each) three times a day for five days; a daily intramuscular injection of procaine penicillin, 300,000 units, may be substituted for any day of oral penicillin therapy

Oral penicillin loses effect when mixed with food. The tablets should be given at least 45 minutes before or 3 hours after meals.

* Any febrile illness in a patient receiving this much penicillin daily will not be benefited by increased penicillin therapy. A throat culture should be taken and appropriate therapy given.

† Criteria for Diagnosis of Suspected Streptococcic Infections: All respiratory infections in which the throat is red or sore, or has exudate, or otitis is present, or cervical adenitis is present, and the temperature is 100 F orally or more, or 101 F rectally or more.

Addenda: (*a*) All suspected cases of scarlet fever should be included. (*b*) Head colds and colds with cough as an outstanding symptom are usually not streptococcic.

## SCHOOL SURVEY FOR CASE FINDING

It was believed that the small group of 80 patients listed in the Handicapped Children's File represented a small percentage of the total patients with rheumatic

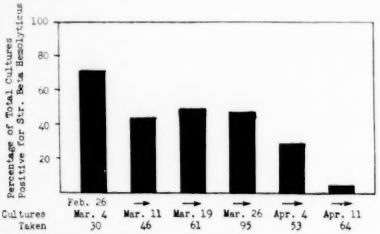
1. Director of Helen Hay Whitney Foundation, and Chairman of American Council on Rheumatic Fever, American Heart Association.

2. Acting Director of House of Good Samaritan, Boston.

3. To simplify the procedures of purchasing and dispensing penicillin, it was necessary to establish a revolving fund in order that the money taken in by the purchase of penicillin could be turned back for the purchase of more penicillin.

4. Jones, T. D.: Diagnosis of Rheumatic Fever, J. A. M. A. **126**: 481 (Oct. 21) 1944.

fever in Newton. Inasmuch as the majority of rheumatic fever attacks occur between ages 5 and 15, the schools seemed to be the logical place for case finding. With physician approval and the cooperation of the Newton public and parochial schools, a plan was evolved to distribute a survey form (table 2) to the parents of 14,000 school-age children. The parent or guardian was requested to indicate on the survey form whether there was a history of rheumatic fever in the family and, if so, to give the names of the persons so affected and the name of their family doctor. Approximately 85% of these forms were returned by the parents, and of these there were 379 families in which parents said there had been a history of rheumatic fever. To check the reliability of this information, letters were sent to the doctors mentioned by the parents for their verification of the diagnosis, and it was found that in 214 families there was a rheumatic fever history, in 86 families there was no such history, and in 55 other families the doctors did not know; data could not be obtained about 24 families. When the request for this information was made to the physicians, approval was also sought to send a form letter to urge the parents to consult them (the physicians) for guidance in rheumatic fever prevention.




Percentage of throat cultures positive for Str. beta hemolyticus from Feb. 26 to April 11, 1950. Cultures (total, 349) were taken by private physicians on patients who had clinically suspected streptococcal infections. They were taken by the dry swab method and were delivered to the hospital within 15 hours of being taken.

## PREVALENCE OF STREPTOCOCCI IN NEWTON

The basis for rheumatic fever prevention lies in the fact that the beta hemolytic Streptococcus is involved in the initiation of the rheumatic fever attack. To determine roughly the prevalence of streptococci in the community, private physicians took throat cultures of patients with clinically suspected streptococcic infections, and the cultures were made by Newton-Wellesley Hospital (Dr. David Skinner, pathologist). A high percentage of the cultures taken in late February and early March were positive for beta hemolytic Streptococcus, and in April the percentage was much lower, as may be seen in the accompanying figure. We made no attempt to correlate the presence of streptococci with clinical disease.

5. Robert L. Early and Alfred L. Skinner, Harvard Medical School, 1951.

6. Keefer, C. S.: Dosage Forms of Penicillin for Systemic Infections, Am. J. Med. 7: 216, 1949. Robinson, J. A.; Hirsh, H. L., and Dowling, H. F.: Oral Penicillin in Treatment of Various Bacterial Infections, Am. J. Med. 4: 716, 1948.

## PRELIMINARY EVALUATION STUDIES

Because this appeared to be the first community program in which the family physicians were taking an active part in rheumatic fever prevention, it was felt that a great deal could be learned from interviews with the physicians themselves; also with physician approval, the parents of 30 patients with rheumatic fever were visited by two medical students [5] to determine how closely the details of the penicillin schedule were followed and what difficulties were encountered. A summary of information obtained in these interviews follows.

No attacks of rheumatic fever have occurred in patients receiving penicillin prophylaxis as of the date of this report (Sept. 1, 1951). Most of these patients received treatment for such a brief period of time (one year or less) that it would be fallacious to imply by this study that no recurrences will take place.

There were no sensitivity reactions in patients receiving penicillin orally for rheumatic fever prevention. Others [6] have felt that this method of administration is the least likely to give reactions.

In January, 1950, only 7 of the 45 (16%) Newton residents known to have had a rheumatic fever attack within five years were receiving antibacterial agents to prevent recurrences (five patients took sulfonamide drugs daily; one took penicillin daily; one received immediate therapy for streptococcic infection). In April, 1951, 51 of 64 (80%) children known to have rheumatic fever who had had attacks within five years were receiving antibacterial agents to prevent recurrences (48 receive penicillin orally each day; three receive sulfonamide drugs because of sensitivity to penicillin).

TABLE 2.—*Newton Health Department Rheumatic Fever Survey*

*Dear Parents:*

The Newton Health Department, in cooperation with the Cardiac Program Committee, is making a survey of the number of families in which a case of rheumatic fever has ever occurred.

The reason for this survey is to bring to you and your family through your doctor new information concerning the prevention of rheumatic fever and rheumatic heart disease.

---

*Please fill in the items below and return to the school immediately:*

Have any of your children or either parent ever been diagnosed as having rheumatic fever (not "rheumatism")?

Yes..... No.....

If "Yes," please answer the following:

1. Name .....
   Address .....
2. Name of your doctor.....
3. Number of children in family.....
4. Names of children or parents who have had rheumatic fever:
   .....
   .....
   .....
   .....

.....
*Signature of parent or guardian*

A digest of the information collected from the parents reveals that, in the majority of cases, penicillin was taken regularly and at the proper times. "Human elements" were found to explain some of the failures. Taking the morning dose three-quarters of an hour before breakfast was difficult for many. In order to keep the proper schedule, two parents arranged with teachers to give the child his tablet before dismissal at lunch time.

Although the children were developing the habit of taking penicillin orally each day, the parents felt that forgetfulness was the commonest reason for omitting a dose. There was no need noted by these parents for any "bribe," and the taking of penicillin seemed rather on a "matter of fact" basis. Many parents remarked that the general health of their children was improved. Several reported better weight gain and better dispositions. All the parents interviewed seemed to appreciate the attempts made to protect their children, and most were extremely enthusiastic about the program.

SUMMARY

Through the efforts of private physicians practicing in the city of Newton, Mass., many patients with rheumatic fever and members of their families have received penicillin to prevent attacks of rheumatic fever. The time between the acquisition of knowledge and its useful application has been shortened. An active program for rheumatic fever prevention has been developed. The physicians have given penicillin orally to rheumatic patients who have had an attack of this disease within the past five years, and they have given immediate penicillin therapy for possible streptococcic infections in members of rheumatic and nonrheumatic families.

This preliminary report indicates that the local physicians have cooperatively developed a comprehensive program on a community basis. It is hoped that a later reevaluation will reveal effective progress in the prevention of rheumatic heart disease.

Commonwealth Ave. and Walnut St. (Dr. Morris).

# ESOPHAGOSCOPY IN ESOPHAGOGASTROINTESTINAL HEMORRHAGE

*Gerard Desforges, M.D., Fred H. Aves, M.D.*
*and*
*John W. Strieder, M.D., Boston*

The persistent admonitions of modern medical textbooks [1] and recent articles [2] against the use of the esophagoscope, or their consistent failure to mention the esophagoscope as a diagnostic aid in acute esophagogastrointestinal hemorrhage, have prompted us to record recent experience with this instrument in diagnosis. When esophageal pathological changes or bleeding in a portion of stomach herniated through an enlarged esophageal hiatus have been ruled out, one can be reasonably certain that the source of bleeding will be found in the stomach or in the first or second portions of the duodenum. The experience at the Boston City Hospital and at other places [3] indicates that gastroduodenal bleeding may frequently be dealt with surgically. Surgery directed at the stomach in the face of hemorrhage from esophageal varices, however, is usually futile and often fatal.

## CLINICAL MATERIAL

The group of patients described here (see the accompanying table) comprises those who at the time of esophagoscopy were bleeding from some type of upper esophagogastrointestinal lesion. They represent experiences during the period from July 1, 1950, to June 1, 1951. During this time, also, our interest was renewed in esophageal tamponage measures for control of bleeding varices. Availability of the Sengstaken-Blakemore double balloon tube [4] stimulated this interest. As time passed, the placing of the balloon was utilized as a therapeutic test. However, this procedure is not without danger, and some of its complications will be discussed.

## TECHNIQUE

In almost all cases the basal sedation that the patient is already receiving for the control of apprehension proves adequate. The most important preliminary measure is Jackson's "sermon on relaxation," [5] with a comprehensible explanation of the procedure to the patient. The presence of intravenous infusion apparatus in no way interferes with the procedure. Oxygen may be administered simultaneously by the intranasal route. Topical anesthesia is effected by means of 2% tetracaine hydrochloride solution administered in small multiple doses by atomizer spray, no more than 3 cc. being used. If the patient is instructed to swirl these small amounts about his mouth for several minutes after each application and then swallow it, this quantity usually suffices. The pyriform sinuses are tested with pledgets of cotton on laryngeal forceps dipped in 2% tetracaine hydrochloride solution. The pledgets are held in each sinus for approximately 15 seconds. This method provides excellent anesthesia for esophagoscopic instrumentation, and it was used in every case except one in this series. The one exception was a cirrhotic woman of very excitable nature who insisted on general anesthesia. The most important and often the most difficult part of the procedure is satisfactory positioning of the patient for the

From the Thoracic Surgery Service, Boston City Hospital.
Teaching Resident, First Surgical (Tufts) Service, Boston City Hospital (Dr. Desforges); Formerly Chief Resident, Thoracic Surgery, Boston City Hospital (Dr. Aves); Professor of Clinical Surgery, Boston University, and Surgeon-in-Chief of Thoracic Surgery, Boston City Hospital (Dr. Strieder).

1. Harrison, T. R., and others, editors: Principles of Internal Medicine, Philadelphia, The Blakiston Company, 1950, pp. 1433-1435. Cecil, R. L.; McDermott, W., and Wolff, H. G., editors: A Textbook of Medicine, ed. 7, Philadelphia, W. B. Saunders Company, 1947, p. 758. Osler, W.: The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine by Henry A. Christian, ed. 16, New York, D. Appleton-Century Company, Inc., 1947, p. 638.

2. Lindenmuth, W. W.: Symposium on Surgical Diagnosis: Hemorrhage from the Gastrointestinal Tract, S. Clin. North America **30**: 1613-1625, 1950. Rush, A.: Symposium on Acute Medical Emergencies: Management of Massive Gastrointestinal Hemorrhage, M. Clin. North America **33**: 1565-1579, 1949.

3. Welch, C. E.: Treatment of Acute, Massive Gastroduodenal Hemorrhage, J. A. M. A. **141**: 1113-1119 (Dec. 17) 1949. Warthin, T. A.; Warren, R., and Wissing, E. G.: Combined Medical and Surgical Management of Upper Gastrointestinal Hemorrhage, New England J. Med. **241**: 473-478, 1949. Sullens, W. E.; Steigmann, F., and Meyer, K. A.: Surgical Considerations in Hemorrhage of the Upper Part of the Gastrointestinal Tract, Arch. Surg. **59**: 1244-1260 (Dec.) 1949.

4. Sengstaken, R. W., and Blakemore, A. H.: Balloon Tamponage for the Control of Hemorrhage from Esophageal Varices, Ann. Surg. **131**: 781-789, 1950.

passage of the esophagoscope. If the patient is able to relax, this can be accomplished readily, but it is useless to begin the procedure before this relaxation has been accomplished. The actual passage of the esophagoscope is somewhat complicated in the seriously bleeding patient because of the initial welling up of blood when the cricopharyngeal pinchcock is traversed. At this descent of the instrument. When one is dealing with bleeding varices, it is usually easier to identify the point of hemorrhage on withdrawal of the esophagoscope, because during its insertion the instrument itself acts as a tampon. After the bleeding area is passed, one can observe a clear and empty viscus immediately ahead. Then, on withdrawal, the exact bleeding point is readily

*Pertinent Laboratory and*

| Case No. | Age, Yr. | Sex | Duration of Bleeding Prior to Admission | Hematocrit or Hemoglobin, Blood Pressure, Pulse Rate | History | Evidence of Hepatomegaly † | Liver Disease Sulfobromophthalein Retention ‡ | Results of Gastrointestinal Studies § |
|---|---|---|---|---|---|---|---|---|
| 1 | 72 | F | 5 hr. | 22, 150/80, 80 | Noncontributory | NP | 18% | Patient could not cooperate |
| 2 | 50 | F | ..... | 10.9 gm., 120/80, 108 | Admission with pneumonia; hematemesis on 8th hospital day; chronic alcoholic | 5 | .... | ..... |
| 3 | 72 | M | ..... | 29, 100/50, 120 | Pain from right-sided cerebrovascular accident on admission; hematemesis on 4th hospital day | 1½ | 20% | Peridnodenal adhesions |
| 4 | 60 | M | 1 day | 15, 120/80, 80 | Chronic alcoholic | NP | 15.3% | Hiatus hernia |
| 5 | 63 | M | 2 days | 17, 108/90, 90 | Known cirrhotic | 3 | 15.7% | Chronic duodenal ulcer |
| 6 | 35 | F | 1 day | 8, 75/20, 140 | Known cirrhotic | 2 | 24% | Chronic duodenal ulcer |
| 7 | 49 | M | 1 hr. | 48, 120/100, 110 | Known ulcer, alcohol (?) ingestion | NP | .... | ..... |
| 8 | 65 | F | 3 days | 4.7 gm., 130/60, 120 | Tarry stool 3 days prior to admission | NP | 30% | Esophagitis (?); esophageal ulcer (?) |
| 9 | 42 | M | 1 hr. | 23, 60/40, 92 | Chronic alcoholic | 3 | .... | ..... |
| 10 | 32 | M | 12 hr. | 31, 130/70, 120 | Chronic alcoholic | 5 | 30% | Esophageal varices; gastritis |
| 11 | 57 | M | 3 hr. | 38, 90/50, 80 | Dysphagia; previous hematemesis and inoperable carcinoma of esophagus | NP | .... | Chronic duodenal scar |
| 12 | 58 | F | 1 day | 28, 100/64, 90 | Anorexia for 2 yr. prior to admission | 4 | 16% | Esophageal varices |
| 13 | 51 | M | 12 hr. | 9.4 gm., 130/90, 96 | Ulcer history; duodenal ulcer and hiatus hernia by previous gastrointestinal study | NP | 6% | Duodenal ulcer; gastritis |
| 14 | 46 | M | 2 hr. | 29, 114/80, 108 | Known cirrhotic | 2 | 8% | Esophagitis; gastritis |
| 15 | 71 | F | 7 days | 8.3 gm., 100/70, 100 | Known cirrhotic | NP | 16% | Extrinsic pressure on duodenum |
| 16 | 55 | F | ..... | 15 gm., 110/60, 120 | Admitted with leg ulcer; hematemesis on 3rd hospital day; chronic alcoholic | NP | .... | ..... |
| 17 | 62 | M | 1½ hr. | 25, 115/60, 84 | Known cirrhotic | 5 | 16% | Varices; gastric ulcer (?) |
| 18 | 60 | M | ..... | 13.5 gm., 180/70, 72 | Admission with a suprapubic mass; hematemesis on 3rd hospital day | NP | .... | ..... |
| 19 | 66 | F | 3 hr. | 17, 100/70, 100 | Ulcer history; hemochromatosis (?) | NP | .... | Prepyloric ulcer; duodenal ulcer |
| 20 | 49 | M | 12 hr. | 27, 92/50, 134 | Chronic alcoholic | 3 | 30% | ..... |

* Anesthesia was general in case 6 and topical in all others. There were no complications from esophagoscopy in any of the cases.

point efficient suction apparatus with an atraumatic tip is mandatory. The remainder of the procedure consists in carrying out the manipulations in as dry a field as possible. Since the esophagoscope cannot safely be passed blindly through a field obscured by blood, frequent aspiration is necessary during the apparent. In our experiences such an examination may be accomplished within three to five minutes from the beginning of the passage of the esophagoscope.

## ANALYSIS OF CASES

The accompanying table summarizes the pertinent data on the 20 patients comprising this study. There were 12 men and 8 women, ranging in age from 32 to

5. Jackson, C., and Jackson, C. L.: Diseases of the Nose, Throat, and Ear: Including Esophagoscopy and Bronchoscopy, Philadelphia, W. B. Saunders Company, 1945, pp. 433-435.

72 years. Direct visualization of the esophagus excluded the diagnosis of varices in 10 patients (cases 3, 4, 7, 8, 11, 13, 15, 16, 18, and 19). One of these (case 11) was shown to have active arterial bleeding from an esophageal carcinoma, and another (case 15) pre-

20) were shown to have varices, and points of active bleeding from these varices were demonstrable in four (cases 2, 9, 14, and 20). Surprisingly enough, in four patients (cases 2, 3, 16, and 18) of the group reported here, the onset of hematemesis occurred eight, four,

*Clinical Data in Series Reported**

| Time of Esophagoscopy After Admission | Esophagoscopy Findings | Place of Examination | Therapy | Outcome | Final Diagnoses |
|---|---|---|---|---|---|
| 2 days | Varices seen | Operating room | Subtotal gastrectomy | Death within 24 hr. of continued bleeding | Esophageal varices with rupture; Laennec's cirrhosis (autopsy) |
| 8 days | Bleeding varices seen | Bedside | Oxycel® packing | Bleeding controlled; death from hepatic coma 1 mo. after admission | Laennec's cirrhosis; bilateral bronchopneumonia; esophageal varices |
| 4 days | Negative | Bedside | Transfusions | Death from pneumonia 2 days after onset of bleeding | Bronchopneumonia; carcinoma of prostate (autopsy) |
| 2 days | Fresh blood; no varices seen | Operating room | Esophagogastrectomy | Death 7 days postoperatively | Bleeding gastric ulcer; postoperative jaundice type (?) |
| 1 day | Varices seen | Operating room | Subtotal gastrectomy | Death 2 days postoperatively | Bleeding varices; Laennec's cirrhosis (autopsy) |
| 10 days | Varices seen | Operating room | Splenorectal shunt; esophagogastrectomy | Death 5 weeks postoperatively | Laennec's cirrhosis |
| 2 days | Negative | Operating room | Subtotal gastrectomy | Convalescence uneventful | Bleeding duodenal ulcer |
| 2 days | Mucosal irregularity | Operating room | Transfusions | Death on 3rd hospital day with glycosuria and fasting blood of 425 mg. sugar level | Diabetes mellitus (?) and coma; bilateral bronchopneumonia |
| 1 day | Bleeding varices seen | Bedside | Oxycel® packing; balloon tamponage | Death 3 days after admission; pulled tube out | Laennec's cirrhosis; bleeding varices |
| 2 days | Examination stopped; patient uncooperative | Bedside | Balloon tamponage | Death 7 days after admission in coma | Laennec's cirrhosis; bleeding varices |
| 1 day | Bleeding from carcinoma of esophagus | Bedside | Oxycel® packing | Death 2 days after admission with uncontrolled bleeding | Bleeding carcinoma of esophagus |
| 12 days | Varices seen | Operating room | Balloon tamponage; esophagogastrectomy; splenectomy | Death 7 weeks postoperatively | Laennec's cirrhosis; esophageal varices; pylephlebitis (autopsy) |
| 1 day | Negative | Operating room | Subtotal gastrectomy | Convalescence uneventful | Bleeding duodenal ulcer |
| 13 hr. | Bleeding varices seen | Bedside | Oxycel® packing; balloon tamponage | Bleeding controlled; convalescence uneventful | Laennec's cirrhosis; bleeding varices |
| 18 days | Esophagitis, distal third | Operating room | Exploratory laparotomy | Convalescence uneventful | Esophagitis, distal third |
| 8 days | Negative | Bedside | Transfusions | Cerebral damage after bleeding | Bleeding peptic ulcer (?) |
| 7 hr. | Varices seen | Operating room | Balloon tamponage; esophagogastrectomy; splenectomy | Death from gastrointestinal bleeding 3 weeks after operation | Laennec's cirrhosis; gastrointestinal bleeding, cause undetermined |
| 8 days | Negative | Bedside | Transfusions | Death from cerebrovascular accident on day of bleeding | Bleeding peptic ulcer (?) CVA§ secondary to anemia |
| 12 days | Negative | Bedside | Subtotal gastrectomy | Death from pulmonary embolus 2 weeks after operation | Bleeding duodenal ulcer |
| 1 hr. | Bleeding varices seen | Bedside | Balloon tamponage | Death 5 days after admission in hepatic coma | Laennec's cirrhosis; bleeding esophageal varices |

† NP, not palpable; figures indicate number of fingerbreadths liver edge was palpated below costal margin.
‡ Where no data appear, the test was not done. § CVA = cerebrovascular accident.

sented the friable mucosa of chronic esophagitis in the lower third of the esophagus. A third patient of this group (case 8) was found to have some irregularity of the esophageal mucosa but no varices and no bleeding point. Examination was impossible in one patient (case 10) because of the onset of delirium tremens. The nine remaining patients (cases 1, 2, 5, 6, 9, 12, 14, 17, and

three, and three days, respectively, after admission to the hospital for disease other than of the gastrointestinal tract. The remaining 16 patients had the onset of their bleeding from seven days to one hour prior to admission. The hematocrit or hemoglobin values in almost all these patients indicated severe blood loss, and the blood pressure and pulse measurements were moderately to mark-

edly abnormal. Of those nine patients who were shown to have varices, seven were known by previous admissions to have cirrhosis of the liver or were, according to their history, severe, chronic alcoholics. In two other patients there was no history of alcohol ingestion and no previously established diagnosis of cirrhosis. Furthermore, one patient (case 15) was known to have cirrhosis of the liver and showed only esophagitis, and another (case 16) was a chronic alcoholic who showed an entirely normal esophagus. Hepatomegaly was present in all cases of bleeding varices except one (case 1). In another patient (case 3) hepatomegaly was present without any concomitant esophageal lesion as demonstrated by autopsy.

The sulfobromophthalein sodium retention test, which has been used extensively at this clinic as a screening measure for persons with serious liver disease and associated bleeding varices,[6] was done in 13 cases. Sulfobromophthalein retention of 15% or greater was obtained in 12 out of the 13 patients. Six out of seven patients among these 13 who had esophagoscopy were shown to have varices. In one instance in which varices were found and sulfobromophthalein retention of less than 15% was obtained, technical considerations were such as to invalidate the procedure. The esophagogastrointestinal barium examination could not be carried out in many of these patients because of their moribund condition. However, taking into consideration observations made on these patients during recent, previous admissions, this examination had indicated the presence of varices in only two of the six patients in whom varices were demonstrable by esophagoscopy. The time of esophagoscopic examination in this series was, for the most part, during the early, active bleeding phase. Several patients (cases 6, 12, 15, and 19) were examined later, however, because of persistent tarry stools following their initial episode of hematemesis. In about half of the cases esophagoscopy was performed in the operating room, and in the others it was performed when the patient was in bed, too ill to be moved. It was never necessary to discontinue other therapeutic measures, such as blood transfusions or nasal oxygen administration, in order to carry out the endoscopy. There were no complications attributable to esophagoscopy in this series. The placing of esophageal oxycel* (absorbable hemostatic) packs was employed in four cases, but it was thought to be of benefit in only one (case 2). The reason for failure was always the early vomiting of the oxycel* tampon. In six instances of bleeding from varices, including the three oxycel*-packing failures, the balloon tampon apparently stopped the bleeding. Two patients (cases 1 and 5) had varices noted by esophagoscopy during their acute bleeding episodes, but no point of active bleeding was found. Because of the possibility that these patients were bleeding from gastroduodenal lesions coincident with the esophageal varices, subtotal gastrectomy was performed. The course in both patients was rapidly downhill, with exsanguination from ruptured varices as proved by autopsy. In two other patients (cases 7 and 13), however, in which no varices were found, subtotal gastrectomy was life saving with the arrest of bleeding from duodenal ulcer craters. In one patient (case 3) no point of bleeding was found during esophagoscopy or later at autopsy. The gravity of prognosis in bleeding from esophageal varices is indicated by the survival of only one of the nine patients in whom this diagnosis was established.

6. Zamcheck, N.; Chalmers, T. C.; White, F. W., and Davidson, C. S.: The Bromsulphalein Test in the Early Diagnosis of Liver Disease in Gross Upper Gastro-Intestinal Hemorrhage, Gastroenterology **14**: 343-363, 1950.
7. Jackson, C., and others: Hematemesis: A Plea for Objective Methods of Diagnosis, J. A. M. A. **85**: 870-875 (Sept. 19) 1925.
8. Schindler, R.: Safe Diagnostic Optical Esophagoscope, J. A. M. A. **138**: 885-887 (Nov. 20) 1948.
9. Carter, M. G., and Zamcheck, N.: Esophagoscopy in Upper Gastrointestinal Bleeding, New England J. Med. **242**: 280-283, 1950.

## COMMENT

The use of the esophagoscope in the diagnosis of acutely bleeding lesions of the esophagogastrointestinal tract is not new. As early as 1925, Jackson [7] pointed out that inferential methods for determining the source of bleeding in hematemesis are subject to a wide range of error. He also showed that there is little danger associated with esophagoscopy, since the endoscopist is able to see what lies ahead of the tube mouth and the tube is never advanced without visualization of a lumen. However, we are in agreement with Jackson,[7] Schindler,[8] and Carter [9] that experienced, careful, and gentle technique is an absolute necessity in the performance of these examinations. As was previously mentioned, great pains were taken to solicit the cooperation of the patient before the esophagoscopic procedure was started. Ideally, an experienced team of three persons—the operator, the head holder, and an instrument nurse—should be present. The ease, quietness, and efficiency with which such a group does its work not only will increase the confidence of the patient but will shorten the time required for successful examination.

In large municipal institutions, such as the Boston City Hospital, the admission of patients with massive upper esophagogastrointestinal hemorrhage is a frequent occurrence. In addition to saving life, the early establishment of the source of bleeding has several important practical aspects. While the development of the modern blood bank has made the prompt and adequate treatment of blood loss possible, no matter how well stocked the supplies may be, they are not inexhaustible. Furthermore, if several bleeding patients are in the hospital at one time, blood supplies must be carefully husbanded for those whose bleeding cannot be stopped by surgery or tamponage. The exclusion of esophageal varices or bleeding from eroded areas in a hiatus hernia will go far toward establishing the rationale for surgery. As a result of experiences in cases 1 and 5, we feel that esophagoscopic diagnosis of varices in an upper esophagogastrointestinal bleeder is sufficient for immediate balloon tamponage, whether or not a bleeding point is visualized. This procedure establishes quickly by clinical course whether the patient is bleeding from varices or other lesions. However, the use of the balloon before esophagoscopy is indicated only rarely unless there is excellent clinical evidence that varices are present. The placement of the balloon is a somewhat traumatic procedure, because of its large caliber. Its presence in the esophagus, in spite of assiduous efforts to keep the esophageal lumen above free of secretions, many frequently produce diffuse pneumonitis secondary to aspiration of the secretions. An additional complication arises from the inadvertent in-

V 149
1952

troduction of liquid feedings into the gastric balloon. This may not be realized at the time, with the result that attempts at removal of the tube may be extremely traumatic. This hazard was well demonstrated in one patient (case 12), who was left with a balloon bezoar in her stomach for three weeks. It was eventually passed rectally.

The foregoing discussion is not meant to minimize the importance of balloon tamponage. The purpose is merely to point out that each procedure has its own peculiar hazards. Accordingly, if at all possible, a diagnosis of varices should be established before this procedure is instituted. This diagnosis is impossible on inferential or clinical grounds alone. The pitfalls of the clinical history, physical examination, and laboratory tests are well known to the clinician.

The sulfobromophthalein sodium retention test, particularly as a screening measure, is perhaps the most useful single test of liver functions.[10] In the present series, six out of seven patients with proved varices were correctly screened. The use of this test is recommended. However, it must be carefully performed and interpreted.[6] Finally, the test is not useful in those few patients who have extrahepatic portal obstruction.

The importance of an esophagogastrointestinal barium study in persons with hematemesis has been emphasized by Zamcheck.[11] In one patient of the present series (case 11), however, information from this source was misleading clinically, in that the patient was found to have a chronic duodenal ulcer scar and consequently was treated for peptic ulcer; the patient returned to the hospital seven weeks later with a nonresectable carcinoma of the esophagus. Esophagoscopy at the time of the second entry for hematemesis revealed bleeding from the tumor surface.

SUMMARY

The value of esophagoscopy in upper esophagogastrointestinal bleeding in a series of 20 patients is demonstrated. Pertinent clinical data on these 20 patients, who showed a variety of esophageal, gastric, and duodenal lesions and on whom esophagoscopy was performed during the active phase of bleeding, are presented. Methods available for arriving at a diagnosis and localizing the source of bleeding in patients with hematemesis are discussed. The value of the Sengstaken-Blakemore double balloon esophageal tamponage tube is discussed, together with notations as to the hazards that may accompany its use.

10. Zamcheck, Chalmers, White, and Davidson.[6] Strade, H. A.; Dotti, L. B., and Ilka, S. J.: A Comparative Study of the Colloidal Red Test in Liver Diseases with Special Reference to the Zinc Turbidity, Thymol Turbidity and Bromsulphalein Tests, Gastroenterology **12**: 934-948, 1949. Cole, W. H., and others: Studies in Postoperative Convalescence, Ann. Surg. **126**: 592-611, 1947. Lavers, G. D., and others: Bromsulfalein Clearance, J. Lab. & Clin. Med. **34**: 965-972, 1949.

11. Zamcheck, N., and others: Early Roentgen Diagnosis in Massive Bleeding from the Upper Gastrointestinal Tract: Clinical Evaluation of Safety and Reliability of Method in 123 Patients, to be published.

# PULMONARY EDEMA IN PATIENTS DYING WITH DISEASE OF THE CENTRAL NERVOUS SYSTEM

*Robert Paine, M.D., John R. Smith, M.D.*
*and*
*Frank A. Howard, M.D., St. Louis*

Various lesions of the central nervous system in man are occasionally complicated by severe acute pulmonary edema. This event has been noted after cerebrovascular accidents, during epileptic seizures, and in other disorders of cerebrospinal function. To the clinicians who were first impressed with the association of such apparently dissimilar conditions, the origin of the pulmonary edema was frankly mystifying. At that time it was perhaps natural to implicate direct neurogenic effects on the lungs, as patients in whom pulmonary edema developed in the course of neurological disease were usually reported to show no evidence of cardiovascular abnormality. In recent years a greater appreciation of the stresses of ordinary living and of disease and a widening field of physiological knowledge have made it possible to evaluate more accurately the impact of various normal and abnormal stresses on circulatory function.[1]

In 1918 Moutier [2] observed a man who had sustained a severe head injury, which was followed by coma, marked hypertension, and a strong pulse. Prior to death of the patient, the course was complicated by acute pulmonary edema. Moutier suggested that death may have resulted less from the cranial trauma than from the effects of neurogenic hyperepinephrinemia, leading to hypertension and deranged pulmonary vasomotion.[3] Vincent and Bernard [4] described cases of encephalitis complicated by acute edema of the lungs. They also noted that injuries of the cervical cord and cerebral trauma led to the complication in patients without evidence of heart disease. In the ensuing years, considerable attention was directed to the question of neurogenic mechanisms in the production of congestion and edema of the lungs, largely in experimental investigation.[5]

From the Cardiovascular Division, Department of Medicine, Washington University School of Medicine and the Barnes Hospital.

This work was performed under a grant-in-aid from the National Heart Institute of the National Institutes of Health, United States Public Health Service.

1. Wolff, H. G.: Life Stress and Cardiovascular Disorders, Circulation **1**: 187, 1950.

2. Moutier, F.: Hypertension et mort par oedème pulmonaire aigu chez les blessés cranio-encéphaliques (relation de ces faits aux recherches récentes sur les functions des capsules surrénales), Presse méd. **26**: 108, 1918.

3. Josué, O., and Bloch, L.: Oedème aigu du poumon expérimentale par injection intraveineuse d'extraits de couche corticale de capsules surrénales, Bull. et mém. soc. méd. d. hôp. de Paris **2**: 55, 1908. Petrén, K., and Bergmark, G.: Remarques sur l'oedème aigu du poumon avec hypertension artérielle paroxystique, Arch. d. mal. du coeur **3**: 65, 1910.

4. Vincent, C., and Bernard, E.: Troubles respiratories dans l'encéphalite, Bull. et mém. Soc. méd. d. hôp. de Paris **46**: 1181, 1926.

5. Hess, L.: Ueber Lungenödem bei organischen Nervenerkrankungen, Wien. med. Wchnschr. **84**: 285, 1934. Wassermann, S.: Zur Pathogenese des akuten Herzlungenödems, Wien. klin. Wchnschr. **41**: 190, 1928. Hess, L., and Pollak, E.: Ueber zerebrale Atemstörung, Wien. Arch. f. inn. Med. **12**: 477, 1926.

In 1927 Antonini and Biancalani [6] reported a number of cases of traumatic injury of the brain and spinal cord in which severe acute pulmonary edema occurred. Their essay emphasized the importance of the complication. Subsequently, there were several reports, largely by European clinicians, of the occurrence of engorgement and edema of the lungs associated with disease of the central nervous system. These reports included cases of cranial and spinal trauma and cerebral neoplasms and hemorrhage.[7] In these instances pulmonary transudation was thought to have occurred because of direct neurogenic vasodilatation of the pulmonary vasculature. It is of further interest that a number of workers [8] attempted to treat pulmonary edema by surgical or pharmacologic interruption of pulmonary "neurogenic" influences. It was also evident from a number of reports that pulmonary edema occurred purely from disturbances of autonomic function in association with central neural illness (e. g., multiple sclerosis and hypoglycemia [9]). Cooke [10] reported the distressing instance of the use of physostigmine salicylate in a healthy subject for the relief of ureteral colic. After administration of the drug, intense dyspnea occurred, and the patient died with acute pulmonary edema. Adelson and Brunn [11] described two patients with multiple sclerosis who had paroxysms of pulmonary edema in the course of treatment with neostigmine. Evidence suggests that serious physiological disturbances, and sudden death, may follow parasympathetic stimulation even from certain ordinary movements or mild reactions of apprehension. These reactions together with their serious forensic implications have been discussed by Simpson.[12]

This brief literary survey indicates that pulmonary edema may be an important complication of significant neurological disease.[13] Most reported attempts at treatment have been governed by the neurogenic concept of pulmonary edema formation; however, it is well known that acute pulmonary edema is a common and dreaded result of acute myocardial failure. Therefore, one may inquire whether patients exhibiting neurological disease and pulmonary edema may not also have significant cardiovascular failure as a sequel to the major illness, even though clinical evidence of cardiovascular damage is not present.

Paine and his co-workers [14] studied the effects of cardiovascular stresses produced by certain neurological stimuli in dogs. When epinephrine was given, or when the cerebral vessels were embolized with particulate matter, the resulting hypertension was usually tolerated by the heart and pulmonary congestion and edema occurred only rarely; however, in these studies, when the heart was previously damaged by the production of aortic insufficiency (from aortic valvulotomy), the superadded cardiovascular stress of epinephrine or of miliary cerebral embolism resulted in cardiac dilatation, severe elevation of pulmonary arterial and venous pressures, and turgidity and edema of the lung tissue. They emphasized that pulmonary edema was observed only when myocardial failure and engorgement of the lungs occurred. Sarnoff [15] has also shown that under pressor strains from abnormal neurological stimuli, defective cardiovascular performance and congestion and edema of the lungs may occur.

Because of the possibility that major disease of the central nervous system may call forth stresses of such magnitude that cardiovascular function is critically strained, a brief clinicopathological survey was carried out so that we might note the evidence of pulmonary edema and the status of the cardiovascular system in subjects who died with and without central neural disease. We did not conduct the survey to analyze minutely the clinical details leading to pulmonary edema but rather to explore the underlying factors in the pulmonary complication.

### AUTOPSY EXAMINATIONS

A search of necropsy protocols was made in the Department of Pathology of the Washington University Medical School for patients who died with major disease of the central nervous system. Special attention was given to the presence of pulmonary edema and morphological evidence of cardiovascular disease, with the use of the usual pathological criteria for the determination of such lesions.[16] Eighty-one consecutive cases in this category were selected. In a parallel series, the records of 57 patients who died of various conditions, exclusive of neurological disease, were likewise chosen in consecutive order, and the notations of the lungs and circulatory apparatus at autopsy were examined. In the combined series of 138 autopsies, 73 of the subjects were found to have edema of the lungs at death.

*Pulmonary Edema in Subjects with Significant Central Neural Disease.*—In this series of 81 autopsy examinations, 34 patients died with brain tumor, 40 had cere-

6. Antonini, A., and Biancalani, A.: Edema polmonare nei traumatizzati del cranio, Arch. di antropol. crim. **47**: 747, 1927.

7. (*a*) Cornil, H.; Hamant, A., and Mosinger, M.: Les syndromes pulmonaires des sections physiologiques de la moelle épinière, Ann. de méd. **28**: 453, 1930. (*b*) Bsteh, O.: Das Lungenödem bei Verletzungen des Zentralnervensystems, Wien. klin. Wchnschr. **44**: 1396, 1931. (*c*) Gernez, C., and Marchandise, M.: Les oedèmes aigus du poumon d'origine nerveuse, Gaz. d. hôp. **106**: 483, 1933. (*d*) Laubry, C., and Cottet, J.: Oedème aigu du poumon d'origine traumatique, Gaz. d. hôp. **108**: 1585, 1935. (*e*) Tardieu, M.: Sur le traitement de l'oedème aigu pulmonaire d'origine nerveuse, Presse méd. **51**: 232, 1943. (*f*) Keser, V.: L'oedème pulmonaire aigu d'origine centrale, Rev. méd. Suisse Rom. **62**: 38, 1942. (*g*) Trillot and Valatx: Fracture du crâne avec hémorrhagie intra-durale: mort rapide par oedème aigu du poumon, Presse méd. **51**: 280, 1943. (*h*) Schlesinger, B.: Neurogenic Pulmonary Edema, Due to Puncture Wound of the Medulla Oblongata, J. Nerv. & Ment. Dis. **102**: 247, 1945.

8. Fontaine, R., and Courtine, G.: Crises d'oedème aigu du poumon chez un paraplégique par section dorsale haute de la moelle, traitées avec succès par des infiltrations stellaires, Presse méd. **48**: 711, 1940. Donzelot, E., and Menetrel, B.: L'infiltration stellaire dans le traitement des crises recidivantes d'oedème aigu pulmonaire, Bull. et mém. Soc. méd. d. hôp. de Paris **56**: 679, 1940. Luisada, A. A.: The Treatment of Paroxysmal Pulmonary Edema, Exper. Med. & Surg. **1**: 22, 1943; The Pathogenesis of Paroxysmal Pulmonary Edema, Medicine **19**: 475, 1940.

9. Reuter, A., and Gaupp, R., Jr.: Beitrag zur Frage der akuten multiplen Sklerose, Ztschr. f. d. ges. Neurol. & Psychiat. **138**: 495, 1932. Weber, F. P., and Blum, K.: Acute Pulmonary Oedema with Hypoglycemic Coma: Example of Acute Pulmonary of Nervous Origin, J. Neurol. & Psychiat. **5**: 37, 1942.

10. Cooke, W. E.: Pulmonary Oedema Following the Administration of Eserine, Lancet **1**: 1052, 1937.

11. Adelson, E., and Brunn, F.: Pulmonary Edema in the Course of Treatment of Multiple Sclerosis with Prostigmine: Report of 2 Cases, Ann. Int. Med. **30**: 838, 1949.

12. Simpson, K.: Death from Vagal Inhibition, Lancet **1**: 558, 1949.

13. Weisman, S.: Edema and Congestion of the Lungs from Intracranial Hemorrhage, J. Surgery **6**: 722, 1939.

14. Paine, R.; Smith, J. R.; Butcher, H. R., and Howard, F. A.: Failure and Pulmonary Edema from Certain Neurological Stimuli, Circulation, to be published. Observations on the Role of Pulmonary Congestion in the Production of Edema of the Lungs, J. Lab. & Clin. Med. **36**: 288, 1950.

15. Sarnoff, S. J.: Massive Pulmonary Edema of Central Nervous System Origin: Hemodynamic Observations and the Role of Sympathetic Pathways, Fed. Proc. **10**: 118, 1951.

16. Smith, H. L.: The Relation of the Weight of the Heart to the Weight of the Body, and the Weight of the Heart to Age, Am. Heart J. **4**: 79, 1928.

V 149
1952

bral hemorrhage, 4 died with cerebral thrombosis, 1 died with amyotrophic lateral sclerosis, 1 of acute anterior poliomyelitis, and 1 of peripheral neuritis. The last three patients died while in Drinker respirators. Thirty-nine of these patients had well-marked pulmonary congestion and edema at necropsy (table 1). Forty-two of the subjects died with no evidence of pulmonary engorgement or edema.

Table 2 illustrates the severity of lung congestion and edema in the group of patients with cerebrospinal disease. Of the six persons who died with fulminating pulmonary edema, five exhibited morphological signs of heart disease; one patient showed no anatomic evidence of heart disease. In the latter subject, a young boy with a fractured skull, fulminating pulmonary edema developed, and he died before blood pressure measurements could be made. Patients who died with moderate pulmonary edema (31 subjects) included 27 (87%) with pathological indications of myocardial disease or hypertension (of unknown duration) prior to death. In the series of 44 patients who died with no evidence of pulmonary edema, 31 (70%) had clinical hypertension or showed signs of cardiac damage at postmortem.

TABLE 1.—*Subjects with Significant Disease of the Central Nervous System With or Without Evidence of Pulmonary Engorgement and Edema at Autopsy*

| Neurological Lesion | No. of Subjects: Lungs Clear | No. of Subjects: Lungs Congested: Edema |
|---|---|---|
| Brain tumor | 21 | 13 |
| Cerebral hemorrhage | 20 | 20 |
| Cerebral thrombosis | 1 | 3 |
| Peripheral neuritis | 0 | 1 * |
| Poliomyelitis | 0 | 1 * |
| Amyotrophic lateral sclerosis | 0 | 1 * |
| Total | 42 | 39 |

* Respirator patients.

*Pulmonary Edema at Necropsy in Subjects Without Disease of the Central Nervous System.*—The 57 patients comprised this group; 23 of these patients died with no indication of edema or congestion of the lungs. In contrast, 34 subjects exhibited pulmonary edema and congestion at necropsy, in four of whom the edema was massive. Twenty-one of the 34 subjects had definite heart disease; four of these had known hypertension as well. Six subjects had no visible evidence of heart disease, and seven died of massive hemoptysis or other conditions capable in themselves of producing pulmonary edema (table 3).

Comparison of the two groups of patients indicates that the incidence of congestion and edema of the lungs is no greater in those who died of neurological disease than in those having no evidence of nervous disorder. Organic cardiovascular disease was present in the majority of patients with pulmonary edema irrespective of the presence of central neural illness.

## COMMENT

Interest in clinical "neurogenic" pulmonary edema has been focused on striking individual cases and on reviews of large series of autopsies on patients with neurological disease. From the remarkably high incidence of pulmonary edema in an autopsy series and the impressive nature of the former, the concept has arisen that neurological disturbances are capable, in some direct fashion, of provoking pulmonary transudation.

Among the neurological cases reported here, the incidence of pulmonary edema was high (46%) and compatible with the reports of others; however, the incidence

TABLE 2.—*Pulmonary Congestion and Edema at Autopsy in Patients with Neural Disease in Relation to Evidence of Cardiovascular Disease*

| | No. of Cases: Total | No. of Cases: Morphological Signs of Heart Disease and or Hypertension | No. of Cases: No Heart Disease or Known Hypertension |
|---|---|---|---|
| Fulminating pulmonary edema | 6 | 5 | 1 * |
| Moderate pulmonary congestion and edema | 31 | 27 | 4 |
| No pulmonary congestion or edema | 44 | 31 | 13 |
| Total | 81 | 63 | 18 |

* Death before blood pressure was taken.

of lung edema among the non-neurological cases was even higher (60%). To our knowledge this is the only reported series in which control series of non-neurological cases were studied. Our results, therefore, do not suggest an important or unique neurogenic role in the occurrence of pulmonary edema. One case included in this series presented the dramatic picture of acute pulmonary edema following a skull injury, with the occurrence of death before clinical cardiovascular evaluation could be carried out. At autopsy, no disease of the heart or blood vessels was found. Similar cases have stimulated speculations as to the cause of this explosive phenomenon. It is apparent from clinical and experimental evi-

TABLE 3.—*Postmortem Findings in Subjects Without Neurological Disorders: Comparison of Incidence of Pulmonary Edema with Pathological Evidence of Cardiovascular Disease and Known Hypertension*

| Postmortem Findings in Lungs | No. of Cases: No. of Cases | No. of Cases: No Pathological Evidence of Heart Disease or Known Hypertension | No. of Cases: Abnormal Heart at Autopsy | No. of Cases: Both Heart Disease and Known Hypertension |
|---|---|---|---|---|
| No congestion or edema | 23 | 10 | 10 | 3 |
| Moderate congestion and edema | 30 | 12 * | 15 | 3 |
| Massive edema | 4 | 1 † | 2 | 1 |
| Total | 57 | 23 | 27 | 7 |

* Other conditions capable of producing the picture of heart failure were seen in six instances: (1) cardiac failure following intravenous administration of fluids, (2) cardiac failure following use of desoxycorticosterone acetate and intravenous administration of fluids, (3) severe pneumonia, (4) pulmonary embolism and acute cor pulmonale, (5) lymphosarcoma and anemia, and (6) airway obstruction.

† Massive hemoptysis.

dence [14] that every heart has a "failure threshold": a maximum of work that cannot be exceeded without the development of myocardial failure. In the normal heart, this critical work level is high and is only rarely exceeded. In the damaged heart the threshold of incompetence is lower and may be surpassed.[17] It is well known that a

17. Paine, Smith, Butcher, and Howard.[14] Roos, A., and Smith, J. R.: Production of Experimental Heart Failure in Dogs with Intact Circulation, Am. J. Physiol. **153**: 558, 1948.

damaged heart may be clinically competent at rest; however, added demands from varying degrees of exertion may provoke cardiac inadequacy and thence edema of the lungs. Cardiac patients may experience attacks of pulmonary edema from sudden fear, excitement, or other emotional upheaval.[18] Paroxysms of hypertension and the general decline of cardiovascular renal reserves in the toxemias of pregnancy can incite violent acute left heart failure with seizures of pulmonary congestion.[19] Acute heart failure also occurs after the onset of tachycardia (paroxysmal or sustained); restoration of compensation is often achieved by the reestablishment of normal rhythm or rate.[20] Tachycardias and paroxysms of hypertension produced by adrenal medullary tumors have precipitated congestive failure in the apparently normal cardiovascular system. The corollary may also be carried to the experimental animal, in which the administration of epinephrine or cerebral embolization is followed by such hypertensive cardiovascular disturbance that failure precipitously follows, especially when the heart has been previously damaged.

Clinical observation has repeatedly shown that trauma or other primary disease of the central nervous system (especially with increased intracranial pressure), or injury of neural tissue that distorts autonomic function, may be complicated by hypertension and by disturbances of cardiac rate and rhythm.[21] In some reports, similar to our case of pulmonary edema following skull injury, no measurements of cardiac performance were described, and cardiac failure in relation to neural disease was not considered. Schlesinger [7b] reported the instance of a young man who sustained a puncture wound of the medulla. The patient was said to show no evidence of heart disease. The subsequent development of severe pulmonary edema was attributed to "neurogenic influences" on the lungs. Weisman [13] assembled a series of cases of pulmonary edema following injury of the central nervous system, and he supported the concept that pulmonary engorgement and transudation occurred without evidence of cardiac disease.

A number of other physiological considerations are of interest in the genesis of heart failure and pulmonary edema under these conditions. Disturbances of cardiac rate and rhythm may be associated with central neural disease, particularly with intracranial hypertension.[21] Experimental data further suggest that, under the general circulatory stresses of such lesions, changes in rate [23] and rhythm may intensify myocardial insufficiency and the attendant congestion of the lungs. Marked bradycardia has been demonstrated in experimental animals to diminish cardiac output when slowing was so extreme that an increased stroke output could not compensate for reduction in heart rate.[24] Abnormally rapid or irregular heart action are likewise known to diminish cardiac efficiency.[25] It seems reasonable to assume, therefore, that, with existing hypertension of neurological cause, the superimposition of critically accelerated or decelerated heart rate (from various mechanisms) might further reduce left ventricular function with resultant pulmonary circulatory stasis. It is further noteworthy that respiratory arrhythmias, or unduly slow or shallow excursions, may interfere with cardiovascular performance. In addition, obstruction to airways in patients with depressed cough and respiratory reflexes may produce significant hypoxia with deterioration of efficiency of the heart.[26]

The sequence of events during death may be important in determining the state of the lungs at necropsy. When respiration ceases or becomes critically impaired before cardiac function is diminished, blood is perfused through abnormally hypoxic lung tissue, and subsequent gradual failure of the heart may then encourage rapid transudation. Conversely, should heart action and pulmonary perfusion suddenly cease before the onset of respiratory failure, the tendency for transudation may be slight, for lack of an adequate transuding force.

V 149
1952

## SUMMARY

Examination of the case material presented here indicates that the majority of patients with serious disease of the central nervous system in whom pulmonary edema developed showed evidence of heart disease at autopsy, or were known to have hypertension before death. Therefore, it seems possible that the pulmonary congestion and edema in these cases were the result of underlying heart disease, to which may have been added hypertension or other abnormality to insure failure of the heart. It is also important that pulmonary congestion and transudation were no more common in the patients with neurological disease than in those who died of other major illnesses. The majority of subjects who died with no neural disorder, but who showed pulmonary vascular stasis and alveolar fluid, also displayed morphological signs of heart disease or were known to have hypertension previous to death. The evidence reviewed suggests that the occasional occurrence of acute pulmonary edema in the presence of an apparently normal heart may be due, in fact, to heart failure produced by the extreme stress of neurogenic hypertension, cardiac and respiratory arrhythmias, and hypoxia.

600 S. Kingshighway.

18. Weiss, S., and Robb, G. P.: Cardiac Asthma (Paroxysmal Cardiac Dyspnea) and the Syndrome of Left Ventricular Failure, J. A. M. A. **100**: 1841 (June 10) 1933. Waters, H. R., and Smith, J. R.: The Mechanism of Pulmonary Edema from Cardiac Failure, J. Missouri M. A. **48**: 377, 1951.

19. Reid, D. E.,and Teel, H. M.: Cardiac Asthma and Acute Pulmonary Edema Complicating Toxemias of Pregnancy: Further Observations, J. A. M. A. **113**: 1628 (Oct. 28) 1939.

20. Resnik, H.; Friedman, B., and Harrison, T. R.: Effect of Certain Therapeutic Measures on the Cardiac Output of Patients with Congestive Heart Failure, Arch. Int. Med. **56**: 891 (Nov.) 1935. Luten, D.: The Relation of Tachycardia to Cardiac Insufficiency, Am. Heart J. **12**: 435, 1935. Reiss, R. A., and DiPalma, J. R.: Right and Left Heart Failure: Unilateral Rises in Right and Left Auricular Pressures in Hypervolemic Cats Following Near Lethal Doses of Quinidine, Auricular Fibrillation and Epinephrine, Am. J. Physiol. **155**: 336, 1948.

21. DeJong, R. N.: The Neurologic Examination: Incorporating the Fundamentals of Neuroanatomy and Neurophysiology, New York, Paul B. Hoeber, Inc., 1950.

22. Deleted in proof.

23. Walker, A. E.; Kollross, J. J., and Case, T. J.: The Physiological Basis of Cerebral Concussion, A. Rev. Nerv. & Ment. Dis. Proc. **24**: 437, 1945. Campbell, G. S.; Haddy, F. J.; Adams, W. L., and Visscher, M. B.: Circulatory Changes and Pulmonary Lesions in Dogs Following Increased Intracranial Pressure, and the Effect of Atropine upon Such Changes, Am. J. Physiol. **158**: 96, 1949.

24. Altschul, R., and Loskin, M. M.: Microscopic Lesions in Acetylcholine Shock, Arch. Path. **41**: 11 (Jan.) 1946. Goldenberg, M., and Rothberger, C. J.: Über die Wirkung von Acetylcholin auf das Warmblüterherz, Zschr. f. d. ges. exper. Med. **94**: 151, 1934.

25. Paine, Smith, Butcher, and Howard.[14] Stead, E. A., Jr.: The Role of Cardiac Output in the Mechanism of Congestive Heart Failure, Am. J. Med. **6**: 232, 1949. Burch, G. E., and Ray, C. T.: A Consideration of the Mechanism of Congestive Heart Failure, Am. Heart J. **41**: 918, 1951.

26. Barach, A. L.; Martin, J., and Eckman, M.: Positive Pressure Respiration and Its Application to the Treatment of Acute Pulmonary Edema, Ann. Int. Med. **12**: 754, 1938.

# CORTICOTROPIN (ACTH) AND CORTISONE IN IDIOPATHIC THROMBOCYTOPENIC PURPURA

*Mario Stefanini, M.D., Enrique Perez Santiago, M.D., Jyoti Bhusan Chatterjea, M.D., William Dameshek, M.D.*
*and*
*Lucy Salomon, Boston*

Idiopathic thrombocytopenic purpura may be due to various pathogenetic mechanisms.[1] It has been recognized recently that, at least in the acute type of the disease, allergic and immunologic factors may be responsible for the occurrence of thrombocytopenia. Since corticotropin (ACTH) and cortisone have been shown to modify immunologic and allergic reactions in various clinical conditions, it appeared of interest to investigate their possible therapeutic value in idiopathic thrombocytopenic purpura. Moreover, we have obtained evidence that corticotropin and cortisone exert a stimulatory effect on the bone marrow cells, including the megakaryocyte-platelet system.

Reports of the treatment of idiopathic thrombocytopenic purpura with the steroid hormones are few and their conclusions justifiably cautious, in view of the extreme variability in the course of the disease. Robson and Duthie [2] studied the effect of cortisone in two cases of idiopathic thrombocytopenic purpura. They noted prompt improvement of the capillary fragility, while the bleeding time followed roughly the changes in blood platelet count. In one case, a definite clinical remission was induced three times, although the platelets failed to return to completely normal levels. Meyer and co-workers [3] treated five patients with 100 mg. of corticotropin a day and concluded that the drug had real value in the treatment of idiopathic thrombocytopenic purpura. These authors also postulated that the spleen regulated the maturation and the release of thrombocytes and that this function might be controlled by the adrenal cortex. These data were extended to include 10 patients,[4] and favorable results on the bleeding manifestations were again reported. Faloon and co-workers [5] treated three patients with idiopathic thrombocytopenic purpura with corticotropin and one with cortisone, noting improvement of bleeding manifestations and of the capillary fragility. Wintrobe and co-workers [6] used corticotropin in one case of moderately severe idiopathic thrombocytopenic purpura; a temporary remission was obtained, but relapse followed in a week and the patient was later cured by splenectomy. Hyman [7] noted temporary improvement in one patient with idiopathic thrombocytopenic purpura given cortisone and persistent remission in a young child receiving corticotropin. In the latter case the prompt control of bleeding manifestations induced by treatment with the hormone appeared to be lifesaving. Evans and Liu [8] described a patient with unremitting, severe chronic idiopathic thrombocytopenic purpura, who had failed to respond to splenectomy. Corticotropin therapy induced two transient clinical remissions.

During the past 20 months we have treated 11 patients with idiopathic thrombocytopenic purpura with corticotropin and/or cortisone. Systematic observations of the influence of the prolonged administration of the hormones on the evolution and course of the disease and on the vascular and plasmatic factors of hemostasis were conducted in eight of these patients. During the same period, studies were made of the effect of single doses of corticotropin and cortisone on the hemostatic mechanism in a series of patients, including 10 with different hemorrhagic diatheses. The results of these studies are discussed in the present paper.

## MATERIALS AND METHODS

Two patients (E. F., case 5, and A. W., case 7) received corticotropin from the Wilson Laboratories, a product described as having twice the potency of the standard LA-1-A from the Armour Laboratories, while one patient (K. H., case 1) was treated with a preparation of corticotropin of comparable potency, supplied by Dr. E. B. Astwood. In these three, intramuscular administration of a test dose of 25 mg. of corticotropin was followed in four hours by the expected drop in the direct eosinophil count and urinary excretion of sodium. The remaining patients received cortisone in various doses. Weight, blood pressure, and fluid intake and output were followed daily. Occasional determinations of serum sodium, potassium, and chlorides were made.[9] Symptoms of overdosage (excessive weight gain, hypertension, marked rounding of the face, hirsutism) and the effect of the medication on the hemorrhagic manifestations of

---

Research Assistant, Blood Research Laboratory, New England Center Hospital (Mrs. Salomon).

Visiting Fellow, Blood Research Laboratory, New England Center Hospital (Dr. Perez). Present address: Santurce, P. R.

Clinical Professor of Medicine, Tufts College Medical School; Senior Physician and Hematologist, New England Center Hospital (Dr. Dameshek).

This investigation was supported by grants from the American Cancer Society (Massachusetts Division) and the C. H. Hood Dairy Foundation.

Fellow of the Rockefeller Foundation (Dr. Chatterjea). Present address: Assistant Research Officer, Indian Council for Medical Research, School of Tropical Medicine, Calcutta, India.

From the Ziskind Laboratories (Hematology Section) of the Joseph H. Pratt and New England Center Hospitals, the Boston Floating Hospital, and the Departments of Medicine and Pediatrics, Tufts College Medical School.

Associate Research Professor of Medicine, Tufts College Medical School; Physician, New England Center Hospital (Dr. Stefanini). This work was completed during the tenure of a Damon Runyon Senior Clinical Research Fellowship, administered by the American Cancer Society.

1. Dameshek, W.: "Humours" and Idiopathic Thrombocytopenic Purpura, Blood **6**: 954-956 (Oct.) 1951.
2. Robson, H. N., and Duthie, J. J. R.: Capillary Resistance and Adrenocortical Activity, Brit. M. J. **2**: 971-977 (Oct. 28) 1950.
3. Meyer, M. C.; Miller, S., and Bethell, F. H.: Administration of ACTH in Hypersplenic Syndromes, Proceedings of Central Society for Clinical Research, 23rd Annual Meeting, Chicago, Nov. 3 and 4, 1951; abstracted, J. Lab. & Clin. Med. **36**: 965-966 (Dec.) 1950.
4. Bethell, F. H.: read before the 68th Meeting, Association of American Physicians, Atlantic City, May 1-2, 1951.
5. Faloon, W. W.; Greene, R. W., and Lozner, E. L.: Hemostatic Defect in Thrombocytopenia as Studied by Use of ACTH and Cortisone, J. Clin. Investigation **30**: 638 (June) 1951.
6. Wintrobe, M. M., and others: Effect of Corticotropin and Cortisone on Blood in Various Disorders in Man, A. M. A. Arch. Int. Med. **88**: 310-336 (Sept.) 1951.
7. Hyman, G. A.: In "Hypersplenism," Combined Staff Clinics of the College of Physicians and Surgeons, Columbia University, Am. J. Med. **11**: 494-506 (Oct.) 1951.
8. Evans, R. S., and Liu, C. K.: Effect of Corticotropin on Chronic, Severe, Primary Thrombocytopenic Purpura, A. M. A. Arch. Int. Med. **88**: 503-506 (Oct.) 1951.
9. These determinations were done in the Clinical Laboratories, New England Center Hospital, Mr. Joseph Benotti, Director.

the patients were noted. Every five days or more frequently in some cases, the following determinations were performed: (1) red blood cell and white blood cell count according to standard techniques; (2) blood platelet count in duplicate, by the indirect method of Dameshek [10]; (3) determinations of the clotting time of whole blood in glass and silicone-coated test tubes; (4) determination of prothrombin activity of plasma and serum; (5) determination of activity of the plasma prothrombin conversion factor (P.P.C.F.), or labile factor; (6) determination of the fibrinogen level. All these techniques have been described in previous communications [11]; (7) determination of the bleeding time, according to the technique of Ivy and co-workers [12]; and (8) determination of capillary fragility. Positive pressure equal to the mean arterial pressure of the subject was applied by means of the cuff of a sphygmomanometer and maintained for 10 minutes. Results of the test were expressed as the number of petechiae in an area 2.5 cm. in diameter, 2 fingerbreadths below the antecubital fossa.

## RESULTS

*Effect of a Single Injection of Corticotropin or Cortisone on the Various Factors of Hemostasis.*—The group studied included 10 patients, divided as follows: three with idiopathic thrombocytopenic purpura, two with hemophilia, two with pseudohemophilia (von Willebrandt's disease), and three with vascular purpura. All patients received an intramuscular injection of either corticotropin (Wilson) or cortisone in a dosage of 2 mg. per kilogram of body weight. The effect on the various factors of hemostasis was determined 4, 8, and 24 hours after administration of the hormone. Only inconclusive variations in the activity of the various agents involved in the process of blood coagulation, the number of platelets, and the bleeding time were noted. It was observed, however, that, while the final value of the bleeding time was not significantly altered, there was a definite prolongation of the phase of reflex vasoconstriction that immediately follows the incision of the skin in Ivy's technique. Capillary fragility, on the other hand, improved in every case, and the number of petechiae decreased strikingly with a maximum effect four to eight hours after the administration of the hormone. Within 24 hours, the number of petechiae obtainable with the tourniquet test returned to the original value (see the accompanying table). These results confirm, in their main lines, those reported by Robson and Duthie.[2]

*Effect of Prolonged Administration of Corticotropin and Cortisone on the Bleeding Diathesis of Idiopathic Thrombocytopenic Purpura.*—A systematic collection of data was possible in eight cases of idiopathic thrombocytopenic purpura. Clinical history, significant physical findings and laboratory data, results of treatment, and a short evaluation of each case are presented below.

10. Dameshek, W.: Method for Simultaneous Enumeration of Blood Platelets and Reticulocytes, with Consideration of Normal Blood Platelet Count in Men and in Women, Arch. Int. Med. **50**: 579-589 (Oct.) 1932.

11. Stefanini, M.: New One-Stage Procedures for Quantitative Determination of Prothrombin and Labile Factor, Am. J. Clin. Path. **20**: 233-240 (March) 1950; Diagnosis of Hemorrhagic Diseases, Bull. New England M. Center **12**: 102-115 (June) 1950. Stefanini, M., and Crosby, W. H.: Utilization of Labile Factor During Normal and Abnormal Coagulation of Blood, Proc. Soc. Exper. Biol. & Med. **74**: 370-372 (June) 1950.

12. Ivy, A. C.; Shapiro, P., and Melnick, P.: Bleeding Tendency in Jaundice, Surg., Gynec. & Obst. **60**: 781-784 (April) 1935.

## REPORT OF CASES

CASE 1.—K. H., a 5-year-old girl, weight 75 lb. (34 kg.), had sore throat and fever and was treated with penicillin seven weeks prior to admission. Purpura, epistaxis, melena, and hematuria were noted for a few days approximately five weeks and again one week prior to admission. Physical examination on admission revealed ecchymoses and scattered petechiae. Laboratory studies showed moderate normochromic anemia; thrombocytopenia (47,000 platelets per cubic millimeter), with an increased number of nonproductive megakaryocytes in the bone marrow; poor retraction of the clot and high prothrombin activity of the serum (62%); a strongly positive reaction to the tourniquet test (48 petechiae); and prolonged bleeding time (more than 20 minutes). The patient was given corticotropin (Wilson) in doses of 40 mg. for five days, 30 mg. for 16 days, 20 mg. for two days and 10 mg. for three days, for a total of 790 mg. over a period of 26 days. The platelet count rose moderately (to a level of 224,500 per cubic millimeter) for a few days at the end of the first week of therapy, only to fall quickly to the original value while treatment was being continued. Clot retraction and prothrombin activity of the serum paralleled the changes in the platelet count. On the other hand, the result of the tourniquet test and the bleeding time became normal or almost so during treatment. Purpura subsided promptly, after approximately four days of treatment, and no new hemorrhagic manifestations were observed during therapy. Two weeks after cessation of corticotropin treatment, however, purpura had recurred and both bleeding time and capillary fragility were again abnormal. Splenectomy was then performed, with excellent therapeutic response. The patient's platelet count has been normal ever since, with the exception of a short period during which, in the course of an undiagnosed "viral" infection, it was reported to have dropped transiently to a level of 84,000 per cubic millimeter.

*Comment.*—Corticotropin therapy failed to induce a remission in this case, although a transient stimulatory effect on platelet production or release was evident and there was a favorable effect on bleeding symptoms and vascular factors of hemostasis. Splenectomy resulted in a sustained rise in the platelet level.

CASE 2.—V. D., a 6-year-old girl, weight 85 lb. (38.6 kg.), had had moderate purpura with thrombocytopenia for approximately four months prior to admission (fig. 1). When the patient was first examined, only a few petechiae and ecchymoses were noted. Laboratory studies showed thrombocytopenia, with a large number of nonproductive megakaryocytes in the bone marrow; insufficient retraction of the clot and high prothrombin activity of the serum; prolonged bleeding time; and increased capillary fragility. The patient received 150 mg. of cortisone daily for 25 days and 100 mg. for 20 additional days, for a total of 5.75 gm. over a period of 45 days. The platelet count rose progressively to almost normal values during treatment, the bleeding manifestations quickly faded, and the various factors of hemostasis studied became normal. Discontinuance of therapy was made necessary by poorly controllable water and salt retention and the appearance of hypertension. Shortly after suspension of therapy, the platelet count fell and moderate hemorrhagic manifestations reappeared. Splenectomy was then performed, with a complete clinical and hematologic remission.

*Comment.*—Prolonged cortisone therapy in this case induced a clinical but incomplete hematologic remission, with a relapse on suspension of therapy. Splenectomy then induced a full remission.

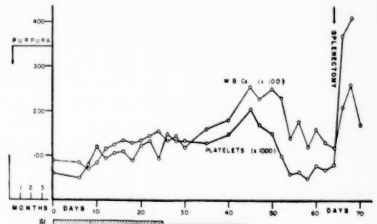
CASE 3.—H. C., a 55-year-old man, weight 215 lb. (97.5 kg.), with the established diagnosis of cirrhosis of the liver and probable tertiary syphilis, had multiple ecchymoses without apparent cause four days prior to his first visit. Physical examination revealed numerous scattered ecchymoses and petechiae and a large, hard liver, palpable 3 fingerbreadths below the costal margin. Laboratory studies showed thrombocytopenia (64,000 platelets per cubic millimeter), with an increased number of inactive megakaryocytes in the bone marrow; definite defect of clot retraction and rather elevated prothrombin activity of serum (47%); prolonged bleeding time (15 minutes); and increased capillary fragility (38 petechiae). The patient received 250 mg. of cortisone for three days, but, in view of early development of hypertension and salt retention, the dose was decreased to 100 mg. daily and the treatment continued for 27 days. The bleeding

V 14
1952

manifestations were reduced with this regimen, and, although the bleeding time remained prolonged, capillary fragility soon became normal. The fibrinogen level remained essentially unmodified. The platelet level tended to rise slowly during and some time after cessation of therapy (up to 294,000 per cubic millimeter, one week after the administration of cortisone had been discontinued). The patient failed to report for periodic examinations. When last seen, he did not present any hemorrhagic manifestations, the bleeding time was only slightly prolonged, and capillary fragility was normal. The platelet count was steadily decreasing at that time.

*Comment.*—With prolonged cortisone therapy a partial remission was probably obtained. There was evidence that relapse was imminent after suspension of therapy, when the patient failed to report for further observation.

CASE 4.—H. F., a 15-year-old boy, weight 115 lb. (52.1 kg.), noted severe purpura, epistaxis, and hematuria four days prior to admission. No definite history of infection or drug intake could be obtained. Examination disclosed multiple ecchymoses. Laboratory studies revealed severe thrombocytopenia (24,000 platelets per cubic millimeter), with an increased number of nonproductive megakaryocytes in the bone marrow; high prothrombin activity of the serum (53%) and almost complete absence of clot retraction; prolonged bleeding time (21 minutes); and increased capillary fragility (29 petechiae). Cortisone was administered in a dose of 150 mg. for 12 days. Bleeding manifestations and capillary fragility improved almost immediately after initiation of therapy, although the platelet count and bleeding time remained practically unaffected. On the 10th day of remission of the process was to be expected; corticotropin (Armour) therapy was begun in a dose of 150 mg. a day and continued for nine days. There was diminution of the bleeding tendency, bleeding time, and capillary fragility within 48 hours; approximately five days after initiation of corticotropin therapy, the platelet count rose precipitously and a sustained remission of the process set in.




| Bleeding time: | 7'30" | 5'30" | 4' | 7'30" | 3' | 2' | 2' | 1'30" | 4' | 4' | - | 4' | 12'30" | 10' | 7'30" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cap. fragility (petech.) | 27 | 3 | 4 | 7 | 3 | 2 | 0 | 2 | 0 | 3 | 1 | 4 | 22 | 18 | 2 |
| Prothr. activ., plasma (%) | 100 | 90 | 100 | 85 | 95 | 100 | 100 | 95 | 85 | 90 | - | 100 | 90 | - | 100 |
| Prothr. activ., serum (%) | 86 | 27 | 15 | 18 | 21 | 27 | 11 | 9 | 9 | 78 | 5 | 72 | 183 | - | 21 |
| P.P.C.F. activity (%) | 85 | 100 | 93 | 100 | 78 | - | 100 | 100 | 75 | 100 | 85 | 90 | 95 | - | 90 |
| Fibrinogen (mg./100cc.) | 2797 | | 3421 | - | 2943 | - | 3127 | - | 3225 | - | 2973 | - | 3157 | - | 4730 |
| Bleeding manifestations | 3+ | | 1+ | | 1+ | | 0 | | 0 | | 0 | | 2+ | | 0 |

Fig. 1.—Effect of the administration of cortisone in a patient with chronic idiopathic thrombocytopenic purpura. (P.P.C.F. = plasma prothrombin conversion factor.)

*Comment.*—Corticotropin therapy in this case was instituted in the hope of controlling the exacerbation of bleeding following splenectomy. Treatment with the hormone appeared to accelerate a delayed response of the disease to splenectomy.

CASE 6.—F. R., a 44-year-old woman, weight 142 lb. (64.4 kg.), had a history of easy bruising and spontaneous hemorrhagic manifestations of six years' duration (fig. 3). Three years previously, thrombocytopenia had been detected, idiopathic thrombocytopenic purpura diagnosed, and splenectomy performed. After operation, the platelet count rose to normal levels for approximately six months, after which time it again dropped to subnormal levels and spontaneous bleeding manifestations reappeared. The patient had noticed that spontaneous bleeding (ecchymoses and petechiae) occurred most frequently in the

*Effect of Single Doses of Corticotropin or Cortisone on Bleeding Time and Capillary Fragility in Various Hemorrhagic Diseases*

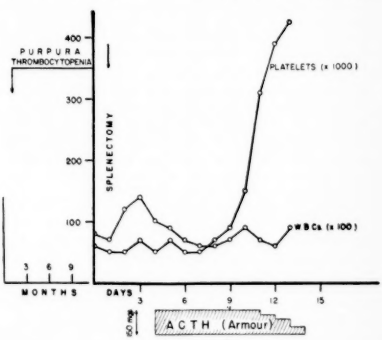
| Diagnosis | Drug* | Bleeding Time (Min.) 0 | 4 Hr. | 8 Hr. | 24 Hr. | Capillary Fragility (Petechiae) 0 | 4 Hr. | 8 Hr. | 24 Hr. |
|---|---|---|---|---|---|---|---|---|---|
| Pseudohemophilia | Corticotropin (Wilson) | >20 | >20 | >20 | >20 | 5 | 1 | 0 | 4 |
| I. T. P.† | Cortisone | >20 | >20 | >20 | >20 | 47 | 19 | 12 | 23 |
| Vascular purpura | Corticotropin (Wilson) | 5 | 5½ | 4 | 5 | 21 | 19 | 7 | 24 |

* Two milligrams per kilogram of body weight.
† Idiopathic thrombocytopenic purpura.

therapy a quick rise in the platelet count was noticed, and a complete remission followed. Bone marrow studies at this time indicated a slightly increased number of megakaryocytes, producing platelets actively.

*Comment.*—Although a prompt remission followed institution of cortisone therapy in this case, this might have occurred spontaneously, since idiopathic thrombocytopenic purpura of the acute variety is usually a self-limited disease, having a course essentially similar to that noted above. The possibility remains that cortisone therapy accelerated a spontaneous process of remission.

CASE 5.—E. F., a 16-year-old girl, weight 112 lb. (50.8 kg.), who had had systemic moniliasis for three years, was admitted because of purpura of one year's duration, menorrhagia, and occasional hematuria (fig. 2). There was history of exposure to many medicinal agents, including rabbit serum and chrysarobin ointment, in the previous three-year period. On examination, in addition to the lesions of diffuse moniliasis of the face, hands, and upper respiratory tract, the patient presented diffused petechiae and ecchymoses. The spleen was palpable at the costal arch. Laboratory studies revealed thrombocytopenia, with an increased number of nonproductive megakaryocytes in the bone marrow; absence of clot retraction and high prothrombin activity of serum; prolonged bleeding time; and definitely increased capillary fragility. Moniliasis of the spleen with secondary thrombocytopenic purpura was suspected and splenectomy advised. Except for enlargement, the spleen was found to be normal and free of Monilia. After splenectomy, the bleeding manifestations became worse and we gave the patient two transfusions of fresh blood in an attempt to arrest the serious oozing from the operative wound, severe hematuria, and skin bleeding. On the fourth day after splenectomy it was apparent that no prompt




| Bleeding time: | <0' | <0' | 7' | 2' | 1'30" |
|---|---|---|---|---|---|
| Cap. fragility (petech.): | 59 | 42 | 0 | 0 | 0 |
| Prothr. activ., plasma (%) | 100 | 85 | 100 | 100 | 100 |
| Prothr. activ., serum (%) | 72 | 42 | 40 | 14 | 7 |
| P.P.C.F. activity (%): | 100 | 100 | 100 | 100 | 100 |
| Fibrinogen (mg./100cc.) | 2790 | 2814 | 1930 | 3014 | - |
| Bleeding manifestations: | 3+ | 2+ | 0 | 0 | 0 |

Fig. 2.—Effect of the administration of corticotropin in a patient with chronic idiopathic thrombocytopenic purpura during the immediate postsplenectomy period. (P.P.C.F. = plasma prothrombin conversion factor.)

intermenstrual period, at which time the platelet count had usually been found to be lowered.

Laboratory studies revealed spontaneous bleeding manifestations (petechiae and ecchymoses); a decreased platelet count; prolonged bleeding time and increased capillary fragility; subnormal clot retraction and moderately elevated prothrombin activity of the serum; and large numbers of megakaryocytes in the bone marrow, most of them inactive. Cortisone therapy was

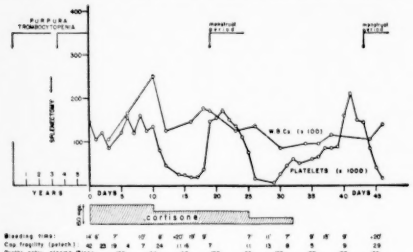



Fig. 3.—Effect of the administration of cortisone in a case of chronic idiopathic thrombocytopenic purpura. (P.P.C.F. = plasma prothrombin conversion factor.)

begun two days after the last day of the menstrual period, in a dose of 150 mg. a day. This was reduced to 100 mg. after 10 days and to 50 mg. after 25 days. Therapy was continued over a period of 42 days, for a total of 3.85 gm. of the drug. During treatment, definite improvement of spontaneous bleeding manifestations and capillary fragility was noted. The number of platelets, however, oscillated in relation to the menstrual cycle and did not appear to be influenced by treatment. A few days after suspension of cortisone therapy, fresh hemorrhagic manifestations were noted and the capillary fragility was again clearly abnormal. The patient reported that the menstrual period occurring while cortisone was being administered was lengthy and the flow profuse.

*Comment.*—Profuse menstrual flow during the course of corticotropin and cortisone therapy has been observed by us in other patients, even in the absence of thrombocytopenia. Although improving the bleeding manifestations and capillary fragility, cortisone therapy, in this case, failed to induce remission of the disease or even to influence the cyclic changes in the platelet count related to the menstrual cycle.

CASE 7.—A. W.,[13] a 15-year-old boy, weight 145 lb. (65.8 kg.), had a purpuric rash and thrombocytopenia in December, 1950, with spontaneous remission in about a week (fig. 4). At the beginning of January, 1951, purpuric spots and thrombocytopenia reappeared and persisted for about a month, when splenectomy was performed. The operation was followed by a temporary rise in the platelet level and remission of bleeding manifestations for three weeks. Early in February, 1951, purpura and thrombocytopenia reappeared, accompanied this time by severe anemia and jaundice and requiring six blood transfusions in one month. On the patient's admission to the hospital (March 20, 1951), pallor and generalized petechiae were the only significant physical findings. Laboratory studies revealed moderate hypochromic anemia with reticulocytosis (5.2%); severe thrombocytopenia, with absence of clot retraction and high prothrombin activity of serum; a normal number of megakaryocytes in the bone marrow, mostly not producing platelets; prolonged bleeding time and increased capillary fragility; a bilirubin level at the upper limits of normal (1 mg. per 100 cc.); a low titer of autoagglutinins and isoagglutinins detectable in an albumin medium and with trypsinized red blood cells; and a positive reaction to the Coombs test. Sixty milligrams of corticotropin (Wilson) was administered for six days. Bleeding

13. Information on this patient after his discharge from this hospital was provided by Dr. David Scheinberge, Memphis.

manifestations improved almost overnight, the bleeding time became shortened, the capillary fragility decreased, and the platelet count began to rise. The patient was then given cortisone, 100 mg. a day for nine days, but the platelet count fell gradually and spontaneous bleeding manifestations reappeared. Sixty milligrams of corticotropin (Wilson) was then administered daily for a period of 16 days. The same striking effect on the platelet count and the bleeding manifestations was observed, and the patient was then discharged for further observation. After suspension of therapy the platelet level tended to drop and spontaneous bleeding to recur. Corticotropin (Wilson), 40 mg. a day for 20 days, was then given, but the platelet count fell as low as 100,000 per cubic millimeter during treatment, although no hemorrhagic manifestations were noted. Corticotropin therapy was gradually discontinued, and, two weeks later, the platelet count began to rise spontaneously. During the 10 weeks prior to the present counting, the platelet count remained normal. During treatment with corticotropin and cortisone the reaction to the Coombs test continued to be positive and only some reduction of the titer of autoagglutinins and isoagglutinins was noted. Blood transfusions, however, were not required to maintain the red blood cell count at a satisfactory level during therapy.

*Comment.*—In this case idiopathic thrombocytopenic purpura was associated with acquired hemolytic anemia. Corticotropin therapy, although failing to induce a permanent remission of the thrombocytopenia or disappearance of red cell antibodies, (*a*) made further blood transfusions unnecessary for maintenance of a satisfactory red blood cell count and (*b*) improved the spontaneous bleeding manifestations and the vascular factors of hemostasis. It is significant that cortisone therapy failed to maintain such favorable effects, although it must be stated that the drug was given at comparably lower doses than corticotropin. Finally, however, there was spontaneous remission.

CASE 8.—D. B., a 32-year-old woman, weight 188 lb. (85.3 kg.), noted severe fatigue four months prior to admission. One month later, severe anemia was noted and was accompanied by jaundice, purpura, and thrombocytopenia. Several blood transfusions were then required. At that time, a sulfobromophthalein sodium test revealed 45% retention of the dye in one hour. Two months prior to admission, purpura, ecchymoses, and menorrhagia were again noted. Physical examination on admission revealed slight icterus of the scleras, scattered petechiae and ecchymoses, hepatomegaly (the liver being just palpable), and splenomegaly (the spleen being felt 2 fingerbreadths below the

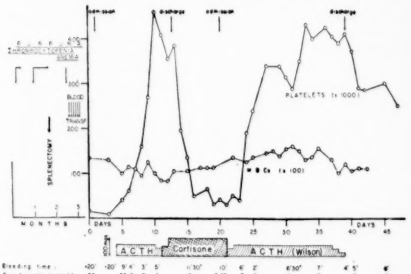



Fig. 4.—Effect of the administration of corticotropin and cortisone in a patient with acute idiopathic thrombocytopenic purpura associated with acquired hemolytic anemia. (P.P.C.F. = plasma prothrombin conversion factor.)

left costal margin). Laboratory studies showed mild normochromic anemia; severe thrombocytopenia (11,670 platelets per cubic millimeter); an increased number of nonproductive megakaryocytes and eosinophils (5.1%) in the bone marrow; poor clot retraction (4%) and high prothrombin activity of the serum (100%); prolonged bleeding time (over 15 minutes) and increased capillary fragility (54 petechiae); normal fecal urobilinogen ex-

cretion (62 mg. per day); absence of demonstrable agglutinins in the patient's serum; and a doubtful reaction to the Coombs test. A diagnosis of acute idiopathic thrombocytopenic purpura was made, possibly associated with a previous attack of acquired hemolytic anemia. The patient was then discharged with cortisone therapy (150 mg. a day) to be continued for one month. Although the platelet level was not appreciably modified during treatment, the spontaneous bleeding manifestations quickly improved and the capillary fragility decreased. Splenectomy was performed after one month of treatment with cortisone and was followed by sustained clinical and hematologic remission.

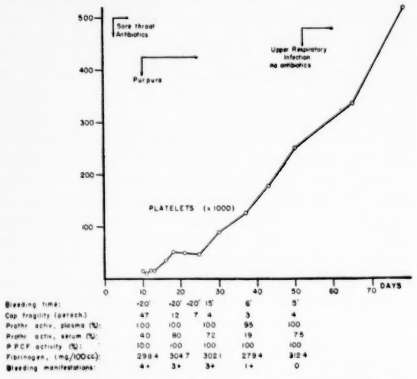

Sore throat
Antibiotics
Upper Respiratory Infection
no antibiotics
Purpura
PLATELETS (x 1000)
DAYS
Bleeding time: >20' >20' >20' 15' 6' 5'
Cap. fragility (petechi.) 47 13 7 4 3 4
Prothr. activ., plasma (%): 100 100 100 95 100
Prothr. activ., serum (%): 40 80 72 19 75
P.P.C.F. activity (%): 100 100 100 100 100
Fibrinogen, (mg./100cc): 298.4 304.7 302.1 279.4 312.4
Bleeding manifestations: 4+ 3+ 3+ 1+ 0

Fig. 5.—Course of events in a case of acute idiopathic thrombocytopenic purpura. Thrombocytopenia and purpura were noted approximately 10 days after the administration of antibiotics for sore throat. Purpura subsided spontaneously 15 days later. The platelet count progressively rose to normal levels. This case illustrates fairly typically the sequence of events in acute idiopathic thrombocytopenic purpura. After an infection or some form of medication and the establishment of an allergic or immunologic "build-up," hemorrhagic manifestations appear because of (*a*) possible direct noxious effect on the capillary wall; (*b*) possible direct noxious effect on the megakaryocytes of the bone marrow, which become inactive and fail to produce and/or release platelets; and (*c*) possible direct destructive effect on the circulating platelets due to acquired immune bodies. During the first stage of the disease the bleeding manifestations in the skin and mucous membranes are severe, the thrombocytopenia is striking, the bleeding time is very prolonged, and the fragility of the capillaries is grossly increased. A few days later, the capillary disorder declines and, although the thrombocytopenia is still present, bleeding manifestations are reduced in intensity and limited, and the bleeding time, still abnormal, is shortened when compared with the previous values. Still later, purpura subsides altogether and, shortly after this, the platelet count begins to rise and a permanent remission becomes established. In a few cases, the acute episode may progress to a chronic process. Although much speculation has been offered, the mechanism of the spontaneous remissions in cases of acute idiopathic thrombocytopenic purpura is not clearly understood. (P.P.C.F. = plasma prothrombin conversion factor.)

*Comment.*—This is another case of associated idiopathic thrombocytopenic purpura and acquired hemolytic anemia. The latter had greatly improved when the patient was seen by us but was evidenced by the icterus, the splenomegaly, and the history of severe anemia requiring several transfusions. Cortisone therapy, although failing to induce remission of the thrombocytopenia, improved the bleeding manifestations and the capillary resistance. Splenectomy effected permanent cure.

*Effect of Prolonged Administration of Corticotropin or Cortisone on Plasmatic Factors of Hemostasis.*—The behavior of various plasmatic agents active in the process of the coagulation of blood was carefully studied during the prolonged administration of corticotropin and cortisone to our patients. This study failed to reveal significant, uniform changes, with the exception of the fibrinogen level. This, in agreement with the observations of others,[14] decreased steadily in most cases during the course of corticotropin therapy to values as low as 60% of the original level and resumed normal values shortly after the institution of treatment. Similar fluctuations were not observed during the administration of cortisone.

## COMMENT

One cannot evaluate the therapeutic results in cases of idiopathic thrombocytopenic purpura without taking into consideration the natural history and the great variability of clinical features, course, and prognosis of the disease. Particularly imperative, when the results of any form of treatment are being considered, is a clear differentiation between the "acute" and "chronic" forms of the disease.[15] Patients with the "acute" disease usually present a sudden onset of bleeding into the skin and mucous membranes, without previous history of hemorrhagic manifestations, with a recent history of acute infection or drug administration (antibiotics, quinidine, or estrogens). Bleeding is severe and the platelet count very low, and the capillary vessels are apparently involved by the process. Since the condition has a short, self-limited course (two weeks to four months), spontaneous remissions are almost always observed (fig. 5). It is not entirely clear whether splenectomy will hasten the development of a remission in these cases. In the presence of acute purpura, however, splenectomy is dangerous and may be followed by fatal hemorrhage. On the other hand, in the "chronic" type the hemorrhagic manifestations are seldom severe (possibly because the capillary vessels are not directly involved) and the platelet count, although low, is usually higher than in the "acute" type. The disease has a prolonged course, occasional spontaneous remissions are transient, and in about 60% of the patients permanent remission follows splenectomy. This sharp distinction between "acute" and "chronic" idiopathic thrombocytopenic purpura may be somewhat artificial and, in individual cases, may be difficult or even impossible. For most cases, however, it appears to be justified, in view the obvious diversity of the clinical picture and, possibly, because of the pathogenesis of the two types of the disease. In the "acute" variety, allergic and immunologic mechanisms are most likely at play. These may be responsible for platelet destruction [1] and for acute vascular damage, which, in turn, may cause excessive platelet utilization. In view of the ability of corticotropin and cortisone to depress allergic phenomena and decrease antibody activity, treatment with these drugs could be expected to be effective in the "acute" type of idiopathic thrombocytopenic purpura. Unfortunately, however, in view of the common occurrence of spontaneous remis-

14. Jager, B. V.; Brown, H., and Nickerson, M.: Alterations in Plasma Proteins, Plasma Volume, and Volume of Packed Cells in Patients Receiving ACTH or Cortisone, J. Lab. & Clin. Med. **37**: 431-443 (March) 1951. Bernfeld, P.; Bonner, C. D., and Homburger, F.: ACTH and Plasma Proteins, in Mote, J. R., editor: Proc. Second Clinical ACTH Conference, vol. 1, Philadelphia, The Blakiston Company, 1951, pp. 282-289.

15. (*a*) Hirsch, E. O., and Dameshek, W.: "Idiopathic" Thrombocytopenia: Review of 89 Cases with Particular Reference to Differentiation and Treatment of Acute (Self-Limited) and Chronic Types, A. M. A. Arch. Int. Med. **88**: 701-728 (Dec.) 1951. (*b*) Stefanini, M., and others: Studies on Platelets: 2. Effect of Transfusion of Platelet-rich Polycythemic Blood on Platelets and Hemostatic Function in "Idiopathic" and "Secondary" Thrombocytopenic Purpura, Blood **7**: 53-76 (Jan.) 1952.

sions, it is often extremely difficult to state whether favorable therapeutic results are actually due to therapy.

In cases of "chronic" disease several different pathogenetic mechanisms have been advocated. Among these are (*a*) "selective sequestration" of platelets by the spleen, a concept that seems to be refuted by recent experiments conducted in this laboratory,[16] (*b*) production in the spleen or elsewhere in the body of an agent that depresses the formation and/or the release of platelets from the megakaryocytes of the bone marrow, and (*c*) attack of the circulating platelets by antibodies present in the serum, which either destroy platelets directly or make them more susceptible to the trapping and destroying activity of the spleen and reticuloendothelium. No direct evidence that corticotropin or cortisone may directly affect any of these pathogenetic mechanisms has been produced thus far. Even in "chronic" idiopathic thrombocytopenic purpura, however, corticotropin and cortisone therapy might conceivably be beneficial in view of the effects of these hormones on hematopoiesis and the various factors of hemostasis. Corticotropin and, to a lesser extent, cortisone, when administered over a long period of time, may, in certain situations, stimulate the production of platelets.[17] The effect of the prolonged administration of corticotropin and cortisone on the coagulation mechanism is still disputed. Even if treatment with these hormones does not affect the clotting time [18] or the activity of many coagulation factors, there appears to be an increased tendency to thromboembolic phenomena during corticotropin administration.[19] Also, patients receiving corticotropin or cortisone appear to be more resistant to the hypoprothrombinemic effect of bishydroxycoumarin (dicumarol®) and tromexan® (3,3'-carboxymethylene bis-[4-hydroxycoumarin] ethyl ester).[19b] Finally, the results of Robson and Duthie as well as our results indicate a beneficial influence of corticotropin and cortisone therapy on capillary resistance. Theoretically at least, then, corticotropin and cortisone would appear to be of some potential value in the treatment of "chronic" idiopathic thrombocytopenic purpura.

With these concepts in mind, a review of the results obtained in our series of cases becomes possible. Corticotropin was used alone in two cases and associated with cortisone in one case of the disease; two cases were of the acute (cases 1 and 7) and one of the chronic (case 5) variety. In none of the three was there a permanent remission of the disease directly attributable to treatment. The success obtained in case 5 was most likely due to delayed response to splenectomy, although it is conceivable that corticotropin therapy may have accelerated this response. In case 1 the use of corticotropin was followed by a moderate rise in the platelet count in an early phase of therapy, but this was transitory; splenectomy in this case gave an excellent result. In case 7, in which splenectomy had previously been performed, a transient return of the platelet level to normal figures was recorded twice during therapy, but a permanent remission occurred spontaneously while no treatment was being given. Five patients were treated with cortisone, three (cases 3, 4, and 8) with the acute and two (cases 2 and 6) with the chronic disease. Among these, there was no permanent response in four (cases 2, 3, 4, and 8). (Permanent remission later followed splenectomy in cases 2 and 8.) A permanent remission was obtained in case 4, a typical case of acute idiopathic thrombocytopenic purpura. In this type of case, as previously mentioned, spontaneous remissions are common and, although cortisone therapy might have accelerated the natural evolution of the disease, there is no real evidence that it was directly responsible for the onset of the remission.

While no permanent remissions were obtained, many of the characteristic symptoms of the disease were modified. Thus, in cases 1, 2, 3, and 7, corticotropin or cortisone therapy was followed by a rise in the platelet count, apparently not attributable to spontaneous fluctuations or technical errors. The failure to obtain a permanent remission, notwithstanding this initial platelet increase, suggests, however, that the fundamental mechanism responsible for the thrombocytopenia persisted during therapy. The prolonged bleeding time was shortened during corticotropin or cortisone therapy, although not in all cases and not always in a striking manner. Prolongation of the early phase of reflex vasoconstriction that follows the incision of the skin in Ivy's technique was noted in all patients. This finding might be correlated with the observations of Ramey and co-workers [20] that $C_{11}$-oxysteroids prolong the local effect of nor-epinephrine. The beneficial influence of corticotropin and cortisone therapy on the capillary fragility was much better defined and constant; in every case of this series the result of the tourniquet test was much improved shortly after the initiation of therapy. The effect on the capillary fragility was rather well correlated with the improvement of the spontaneous bleeding manifestations, which was rather prompt and definite in all cases of this series. A similar beneficial effect of corticotropin and cortisone therapy on the bleeding manifestations was observed in three less completely studied patients with idiopathic thrombocytopenic purpura and in 10 with acute lymphocytic leukemia treated with combined administration of 4-aminopteroyl glutamic acid (aminopterin®) and corticotropin. The already low platelet count of these patients was consistently lowered further by treatment with the folic acid antagonist. New bleeding manifestations, however, were seldom noticed when corticotropin was being administered along with 4-aminopteroyl glutamic acid, even when the latter drug was given in doses much larger and for periods of time longer than usual.

16. Stefanini, M., and others: Studies on Platelets: 3. Absence of "Selective Sequestration" and Destruction of Platelets by Spleen in "Idiopathic" Thrombocytopenic Purpura, Blood **7**: 289-301 (March) 1952.

17. Dameshek, W.; Saunders, R. H., and Zannos, L.: Use of ACTH in Treatment of Acute and Subacute Leukemia, Bull. New England M. Center **12**: 11-21 (Feb.) 1950.

18. Fahey, J. L.: Effect of ACTH on Whole Blood Coagulability, Proc. Soc. Exper. Biol. & Med. **77**: 491-494 (July) 1951.

19. (*a*) Cosgriff, S. W.: Thromboembolic Complications Associated with ACTH and Cortisone Therapy, J. A. M. A. **147**: 924-926 (Nov. 3) 1951. (*b*) Stefanini, M., and Chatterjea, J. B.: Blood Research Laboratory, New England Center Hospital, unpublished data.

20. Ramey, E. R.; Goldstein, M. S.; Fritz, I., and Levine, R.: Relation of Nor-Epinephrine and Other Autonomic Agents to Vascular Collapse of Stressed Adrenalectomized Animals, read before the 63rd Annual Meeting of the American Physiological Society, Cleveland, April 29, 1951; abstracted, Federation Proc. **10**: 108 (March) 1951.

21. Evans, R. S., and others: Primary Thrombocytopenic Purpura and Acquired Hemolytic Anemia: Evidence for a Common Etiology, A. M. A. Arch. Int. Med. **87**: 48-65 (Jan.) 1951.

V 14
1952

Case 7 of our series poses a number of interesting problems. As in case 8, idiopathic thrombocytopenic purpura was associated with acquired hemolytic anemia. This has been emphasized by Evans and co-workers [21] as an indication that in some instances idiopathic thrombocytopenic purpura may be due to immunologic mechanisms similar to those at play in acquired hemolytic anemia. In view of the probably immunologic or allergic pathogenesis of the thrombocytopenia in this patient, the prompt response of the platelet level to corticotropin therapy is not surprising. It is interesting, on the other hand, that cortisone therapy failed, in the dosage used, to maintain the remission induced by corticotropin therapy. We recently studied a patient with chronic idiopathic thrombocytopenic purpura who had had an unsuccessful splenectomy, in whom the severe bleeding manifestations could be controlled with corticotropin therapy, while they were unaffected or even made worse by the administration of cortisone. These observations might suggest that corticotropin is more active than cortisone in the treatment of idiopathic thrombocytopenic purpura. Since, however, in case 7 no influence on the platelet count was observed when the dose of corticotropin was reduced, it might well be, at least in some instances, that failure of corticotropin and cortisone therapy in cases of idiopathic thrombocytopenic purpura is due to insufficient dosage of these hormones.

Conclusions as to the value of corticotropin and cortisone therapy in idiopathic thrombocytopenic purpura are difficult to reach, in view of the complex effects observed. It seems safe to assume that no permanent remission of the disease is obtainable, although a transitory increase in platelets may be observed. On the other hand, the ability of these hormones to influence favorably the bleeding manifestations of the disease cannot be underestimated. We have repeatedly noted how corticotropin and cortisone therapy may reduce promptly the spontaneous bleeding manifestations of many patients with idiopathic thrombocytopenic purpura. At the present time our resources against severe bleeding in cases of idiopathic thrombocytopenic purpura are limited, consisting mostly in the transfusion of fresh platelet-rich blood or plasma or of isolated platelets.[12b] It seems to us that corticotropin and cortisone may be of some value in the management of idiopathic thrombocytopenic purpura, contributing to (*a*) control of severe bleeding, especially in the "acute" disease, when an expectant attitude may be rewarded by the occurrence of spontaneous remission; (*b*) reduction in loss of blood at the operating table when used prior to splenectomy (delayed wound healing has not been observed except after prolonged corticotropin or cortisone therapy); and, finally, (*c*) control of the severe spontaneous bleeding symptoms occurring in some patients who have had an unsuccessful splenectomy.

It is not possible to explain the mechanism by which corticotropin and cortisone affect favorably the capillary resistance. It is probably related to the beneficial effect of splenectomy or even of the simple incision of the skin on the bleeding manifestations and capillary fragility in cases of idiopathic thrombocytopenic purpura that was observed by Robson.[22] More studies are needed to elucidate this significant point, which may greatly improve our understanding of the pathogenetic mechanism of idiopathic thrombocytopenic purpura.

SUMMARY

Eleven patients with "acute" and "chronic" idiopathic thrombocytopenic purpura were treated with corticotropin (ACTH) or cortisone, and systematic studies were conducted in eight. Although no permanent remission of the disease was obtained in any of the patients studied, these hormones (*a*) reduced, in most cases, the spontaneous bleeding manifestations, (*b*) improved the capillary fragility, and (*c*) shortened the bleeding time and prolonged the phase of initial vasoconstriction that followed the incision of the skin. It appears that corticotropin and cortisone may be usefully employed in patients with idiopathic thrombocytopenic purpura: (*a*) to control severe bleeding, especially in those with the "acute" type of the disease, when an expectant attitude may be rewarded by the occurrence of spontaneous remission; (*b*) prior to splenectomy, when this procedure is considered necessary, to reduce the loss of blood at operation; and (*c*) when splenectomy has been unsuccessful and severe spontaneous bleeding manifestations continue.

ADDENDUM

Four additional patients with idiopathic thrombocytopenic purpura have been treated with corticotropin or cortisone since this article was submitted, with results that confirm those of the present article. In one of these patients, who had the chronic type with a demonstrable high titer platelet agglutinin in the serum, administration of cortisone temporarily reduced the titer of the agglutinin, without, however, appreciably affecting the number of circulating platelets.

Harrison Ave. and Bennet St. (Dr. Stefanini).

22. Robson, H. N.: Idiopathic Thrombocytopenic Purpura. Quart. J. Med. **18**: 279-297 (Oct.) 1949.

---

**Toxic Effect of Nerve Gases.**—The nerve gases . . . are nearly colorless, essentially odorless liquids, which yield toxic vapors on evaporation. More toxic than formerly known chemical warfare agents, they may gain entrance to the body by inhalation of the vapor or by absorption of the liquid agent through the skin, the eyes or the gastrointestinal tract. The symptoms induced are due largely or entirely to the inactivation of cholinesterase. This leads to the accumulation of acetylcholine in both the central and the peripheral nervous system and to acetylcholine poisoning. . . . Exposure to traces of the vapor causes pin-point constriction of the pupils in a few minutes, usually accompanied with mild paroxysmal bronchoconstriction and a watery nasal discharge. A slightly greater exposure induces ciliary spasm, pain on focusing the eyes and a drawing sensation or pain in or back of the globes, radiating frontally or to the occiput, and is often accompanied with moderate photophobia. . . . The inhalation of larger doses of vapor, or the absorption of liquid nerve gas by other routes, causes a rapid and severe bronchospasm, which obstructs both inhalation and exhalation. The subject becomes confused and cyanotic, may have nausea and vomiting and soon falls unconscious. Meanwhile, his blood pressure falls to shock level; severe bradycardia develops, and cardiac arrest may occur as a temporary or terminal event.—Colonel John R. Wood, M.D., Medical Problems in Chemical Warfare, *Journal of the Royal Army Medical Corps*, March, 1951.

# EIGHTEEN YEARS OF DEPENDENCE ON A RESPIRATOR

*Scott Lord Smith, M.D., Poughkeepsie, N. Y.*

A case of respiratory poliomyelitis and peripheral paralysis was reported in THE JOURNAL (**113:** 1806 [Nov. 11] 1939) in which the patient had depended on a respirator for eight years. This dependence continued 10½ more years until the patient died, on April 17, 1950. During the 18½ year period that he was ill, the patient stayed in Vassar Brothers Hospital, Poughkeepsie, N. Y. As the report covering the first eight years is presented here in the briefest outline, the original report should be referred to for details.

## REPORT OF A CASE

B. S., then 13 years old, was admitted to the medical service of Vassar Brothers Hospital on the fifth day of an acute attack of poliomyelitis, with complete paralysis of all four extremities, with the exception of the toes and the fingers of the left hand. Twelve hours later, dyspnea and cyanosis necessitated the continuous use of the respirator, on which he was dependent during his entire illness. At first, he could be out of the respirator for only 30 seconds before acute respiratory distress developed. The ability to carry on voluntary or perhaps semivoluntary respiration with his auxiliary muscles of respiration and one leaf of the diaphragm slowly increased, permitting him by the end of the first year to remain outside the respirator eight to nine hours a day and to eat outside of it. Fluoroscopic examination revealed a right diaphragm excursion that was estimated to be 2 cm., and no movement of the left leaf was visible.

In the second year, the slowly built up dependence on the right scalenus group as auxiliary respiratory muscles collapsed without warning. Rushed back into the respirator, the patient remained there for days, until the left scalenus muscles developed a compensatory capacity. During this year, attempts were made to induce the development of subconscious respiration; these consisted of encouraging attempts to sleep with the respirator shut off, opening the respirator after the patient had gone to sleep with it running, and using sedatives and fatigue to induce natural sleep. All these measures failed.

During the first years, three types of problems arose and are described in detail in the first report: (1) those immediately connected with the patient's care, (2) those concerned with the physiological changes occurring as a result of extreme paralysis, and (3) those involved in a study of his respiratory control. During this period, many general problems were encountered. A kidney stone, eyestrain, scoliosis, contractures, and psychological adjustment all demanded attention. In addition, he had been through the vicissitudes of pneumonia, eczema, hay fever, mental depression, and the recurrent common cold, which was particularly difficult to deal with in one who could not cough, spit, or sneeze. Continuous 24 hour special nursing care was unavoidable and was exceeded in importance only by the mechanical respirator. The same machine, with only rare intervals of disuse while it was being repaired, was used during the entire 18 year period.

The final case history begins as the preliminary report ended, with a review of the mode of life, physical and mental symptoms, and laboratory findings of a 20-year-old youth who, since the beginning of his illness, had never drawn a sleeping breath, because each respiratory movement depended either on his voluntary muscles of respiration when out of the respirator or on the negative pressure of the machine when in use for sleep or rest. His first 8 years of such existence were remarkable and worthy of comment, so 10 more years, raising the period of dependence to 18½ years, becomes the more worthy of being recorded. Such a review, moreover, describes the progressive and disastrous changes that occur in the human body as a result of a totally abnormal mode of life. The later years covered in the preliminary report pointed the way to degenerative changes. Renal calculi were formed; spinal curvature developed; there were contractures of both hands; and there were psychological and psychiatric changes. In the interest of brevity, this review will be divided into two five year periods and a terminal six month period.

The first period, therefore, starts with the picture of a young man who has abandoned the hope of recovery with which he courageously met the early years. For hope he substituted interest in the things about him and in the reports of athletic contests, in crossword puzzles, chess, checkers, and card games. Learning to direct chess moves on a board behind him, which he saw in a mirror, involved education in the basic physics of light for the patient and his nurses and physicians. Many of his chess games were carried on by mail with other invalids.

During this five year period, there was little detectable change. The patient's weight remained around 80 lb. (36.3 kg.); scoliosis did not materially increase; and periodic roentgenograms showed only a slow increase in size and a change in shape of the left renal calculus in the renal pelvis. There was more albuminuria but less bleeding and pain. He was out of the respirator for 5 to 10 hours a day and made frequent trips to the movies in his wheel chair. His morale was good and his spirits high.

During the second five year period, the pattern of degeneration as outlined in the earlier story began to develop slowly and inexorably. Peripheral edema developed, beginning in the hands and feet, and albumin, which was 20 mg. per 100 cc. at the beginning of the period, was now 200 mg. per 100 cc. The amount of time spent in the respirator slowly increased as did the number and duration of upper respiratory infections, which for years had been less frequent. On the brighter side, he was able to enjoy vacations for three summers, making the 30 mile ride to a lakeside cottage in a truck equipped with an emergency generator for the respirator, which was also in the truck. Here, with his parents and one nurse, he could spend his days in a wheel chair on the dock and have "his people with him." At this point, I must pay tribute to the role that parental devotion played in maintaining morale and adding physical comfort. Daily, during the entire 18 years, one or both parents would be at the hospital to prepare and eat supper with him, run his movies, or play games with him. The vacation in his last summer was marred by increasing edema, increasing dependence on the respirator, and physical distress for which sedation was needed.

The terminal period, which ensued in the autumn of 1949, was a period of rapid, general deterioration, the most pronounced factor being the increasing subcutaneous edema; anasarca developed, but the serous cavities participated to only an insignificant degree. The extremities and genitals became enormously distended. The patient's weight increased 50 lb. (22.7 kg.), and, in the last few days of life, fluid dripped through the skin of the axilla fast enough to permit collection in a test tube. This fluid had approximately the chemical properties of sweat: protein, 1.20 gm.; albumin, 0.46 gm.; and globulin, 0.74 gm. per 100 cc., with albumin-globulin ratio, 0.6; urea nitrogen, 16.4 mg., and sodium, 141.5 mg. per 100 cc. A phenolsulfonphthalein test for renal function showed 8.6% excretion in one hour, 6.8% in the second hour, and 11.0% in the third hour, for a total of 26.4%. The volumes of the hourly urine specimens were 64 cc., 46 cc., and 60 cc., making a total of 170 cc. The blood urea nitrogen, which had been 8.0 mg. per 100 cc. a few months before, was now 46.6 mg. The creatinine and chloride levels did not change appreciably. Nonprotein nitrogen was 83.8 mg. per 100 cc.; total serum proteins were 4.64; albumin was 1.99; globulin was 2.65; and the albumin-globulin ratio was 0.75.

At this time, the patient had, without prodromal symptoms, a profuse gastric hemorrhage and vomited bright red blood. Anorexia, abdominal distention, and growing lethargy, merging into coma in the last three days of life, accompanied the kidney dysfunction. The autopsy, which did not include examination of the brain and the central nervous system, revealed the following findings. Renal calculi had developed in both kidneys; there was pyonephrosis of the left kidney and perirenal abscesses; and there was amyloidosis of both kidneys. The left kidney was completely functionless, and a small cystadenoma was found

V 14
1952

in the right kidney. There was atelectasis of the left lower lobe of the lung and anthracosis of both lungs and hilar lymph nodes. There was complete atrophy of the muscle in the left dome of diaphragm. The right leaf contained a thin layer of muscle fibers, but there were none in the left leaf, which was a thin parchment-like membrane. There was complete atrophy of chest and abdominal wall muscles and of skeletal muscles. In the abdominal cavity, it was noted that the fat was about 2 cm. thick. No abdominal wall muscle tissue was seen, and the fat was firm, fibrous, and indurated. Also, the covering of the chest showed complete atrophy of pectoral muscles. There was fibrous tissue between the fat and the ribs. The fat was tough and leathery. There was amyloidosis of spleen and adrenals, duodenal ulcer, edema of the legs and arms, and the spinal column was sharply bowed to the right from the cervical region to the sacrum.

SUMMARY

A case of poliomyelitis with massive peripheral and respiratory paralysis, ending in death after 18 years' dependence on a respirator, is discussed and followed through the entire period of illness. A search of the literature, with the help of the New York Academy of Medicine library staff, has disclosed no reports of a similar case for comparison or suggestions. Problems suggested and remaining unanswered in this report are concerned with why the subconscious control of respiration in sleep failed to redevelop, in spite of persistent efforts to induce sleep by sedatives and fatigue. (Dr. Drinker felt that apprehension was the cause of the sleeplessness outside the respirator and suggested the measures we used in the attempt to overcome it.) The second question concerned the reason for the serous cavities not participating in the general anasarca. The frequency of respiratory infection and the mechanical difficulties involved in treating them are described and discussed. Much of this boy's treatment took place before the sulfonamides and the antibiotics were used. The enormous importance of morale is emphasized, and the many possibilities of diversion and education for the greatly handicapped are apparent. The original Drinker respirator remained in use for the entire 18½ years.

113 Academy St.

# TEEN-AGE DRUG ADDICTS ARRAINGED IN THE NARCOTIC COURT OF CHICAGO

*Harry R. Hoffman, M.D., Irene C. Sherman, M.D., Fannie Krevitsky, M.A.*
*and*
*Forrestine Williams, B.A., Chicago*

149
52

The growing menace of drug addiction among teenagers has aroused the public to the extent that in some areas efforts are being made to determine the cause and to find ways of treating it. The epidemic-like quality of the problem indicates the need of close cooperation of all public groups to attempt to understand and deal with it. In Chicago, the problem is being attacked in several ways, but primarily the emphasis has been on law enforcement and legal procedures to deal with law offenders who are also drug addicts.

On April 2, 1951, the Narcotic Court of the Municipal Court of Chicago was established as a result of the recognition on the part of law-enforcing officers of the increasing use of narcotics among teen-agers and the resulting increase in crime occasioned by their use. All cases originating in Chicago that involve law-violating narcotic addicts are processed through the Narcotic Bureau of the Chicago Police Department for trial in the Narcotic Court. This court, the only one of its kind in the world, is now handling all cases of law-violating addicts in the city of Chicago. It is presided over by Judge Gibson E. Gorman, who on its inception asked for support and advice from other disciplines dealing with this problem. At his request, the services of the Mental Hygiene Section of the Chicago Health Department were made available to him in an advisory capacity. As an outgrowth of this plan, the staff of the Mental Hygiene Section, consisting of two psychiatrists and two psychiatric social workers, on the suggestion of the Advisory Committee to the Mental Hygiene Section, made a study of 25 teen-age addicts appearing in Judge Gorman's court, in the hope that some light might be thrown on the cause of addiction and make possible some recommendations to the court, social agencies, and the community at large.

As we observed the general population of the court, we found that most of the law offenders were petty criminals, who engaged in such acts as petty thievery and soliciting to support their addiction. Possession and peddling were more serious offenses. Except for those brought into court on a loitering charge, almost all the offenders were "lone wolves." Organized gangs do not tolerate drug addicts, because of fear of their unpredictable behavior.

Illinois law regarding narcotic drugs is found in the Uniform Narcotic Drug Act, of which section 23 was approved July 8, 1935, as amended to read as follows:

> Whoever violates this act by selling, prescribing, administering or dispensing any Narcotic Drug, shall be imprisoned in the penitentiary for a term of not less than one year nor more than five years for the first offense. Whoever violates this act by possessing, having under his control, manufacturing or compounding any Narcotic Drug shall be fined for the first offense not more than $5,000.00 or be imprisoned for a period of not less than one year nor more than five years, or both. For any subsequent offenses, the violator shall be imprisoned in the penitentiary for any term from two years to life.
>
> Whoever violates this act by selling, prescribing, administering or dispensing any Narcotic Drug to any person under 21 years of age shall be imprisoned in the penitentiary for any term from two years to life.
>
> Whoever is authorized in this act to manufacture, possess, have under his control, sell, prescribe, administer, dispense, or compound any Narcotic Drug, who violates this act by failing to comply with any provision prescribed in this act for the exer-

From the Mental Hygiene Section of the Chicago Board of Health, section financed by the National Mental Health Authority. Dr. Hoffman, Director; Dr. Sherman, Chief Psychiatrist; Miss Krevitsky, Director of Psychiatric Social Service; and Miss Williams, Psychiatric Social Worker.

cise of such authority, for the first offense, shall be fined not more than $1,000.00 or be imprisoned in the County jail for a term of one year, or both; and for any subsequent offense shall be fined not more than $3,000.00 or be imprisoned in the penitentiary for a term of not more than five years or both.

Any offense under this act shall be deemed a subsequent offense if the violator shall have been previously convicted of a felony under any law of the United States of America or of any state or territory, or of the District of Columbia, relative to Narcotic Drugs.

In addition to the above Uniform Narcotic Drug Act, the City Council of Chicago, in an effort to combat the growing problem of addiction and to eradicate sources of supply of drugs, on May 24, 1951, amended the city disorderly ordinance to include loitering by a narcotic addict. The new loitering ordinance was included in section (13) of City Ordinance (193-1).

Loitering according to police usage means to loiter in public places, presumably with intent to commit crime or mischief; to linger idly along the way; spend time idly; be dilatory; delay; to travel indolently with frequent intermissions; or to consume time idly.

Designed primarily to bring the narcotic user before the court and to impose sentence in the form of "cold turkey"[1] treatment, the ordinance has created panic both for the addict and for all young persons whose only place of meeting friends has been the street. Under this ordinance, the "cured" addict may feel like a condemned man whose telltale scars on his arms will forever prevent his freedom from the police.

In the atmosphere of fear and punishment that prevails in a court setting, we studied 25 young addicts, 17 to 21 years old, a psychiatrist interviewing the addict and the social worker, the relatives. The interviews were made after the court had passed judgment, and we recognized that both the defendant and his relatives might be hostile and suspicious. Surprisingly enough, both were willing to cooperate, and except for one situation the general emotional tone was that of passivity during the court hearing and the interviews, although the defendant at the time of his court appearance had usually already experienced from one to five days' detention in the city lockup.

This report is based on 21 case studies, the remaining 4 being rejected because of race, sex, or lack of available history. At the time the study was made, the Negro male offender predominated in the court, and the representative sample was therefore limited to male Negroes.

Of the 21 youths studied, the age range was 17 to 21 years, with an average of 18.8 years. Eighteen were single and three married. Two were born out of wedlock, and in one case this information was not ascertained. Eight were living with only their mothers, two with only their fathers (one of these boys slept in his father's home but took meals and had his laundry done by an older sister, who was the only "mother" person he had known), seven with both parents, two with grandmothers, and two with their wives.

The group appears to be typical of the general population of teen-agers in terms of education and intelligence. Of the 21 boys, only 4 had had less than at least some high school education, and one had completed three years of college. Of the 16 who had attended high school, 6 were graduates. The four who had not attended high school had all quit grade school at the age of 16, one having reached the fifth grade, one the sixth, and two the seventh grade. In one of these instances, there was a special reading difficulty—word blindness. In a second, there was a question of possible organic brain disease following an accident. In the other two instances the mentality seemed definitely dull. On the basis of these findings, intelligence as such was not a significant factor in drug addiction in this group.

All but 1 of the 21 boys were users of heroin (diacetylmorphine), and he had been smoking marijuana for one month. The usual process of development of the drug habit was to start with marijuana and, after an interval varying from one month to two years (average 12 months), to change to heroin. Only four boys stated they had started their habit with heroin.

The age of onset of the use of drugs ranged from 13 to 19 years, with an average of 16.6 years. Two-thirds of the group said they were taking one to two capsules a day. Five boys stated they were taking cocaine, and one was taking morphine and opium as well as heroin. Eight said they drank no alcohol, 10 drank occasionally, and 3 drank regularly while taking drugs.

All these youths lived in a thickly populated, deteriorated area on the south side of Chicago. There are few playgrounds and community recreation centers in this area, and the youths have accepted the streets as meeting places with friends. Housing is poor and rentals exorbitant, but the parents seemed happy to have a place to live and invariably indicated that they were managing satisfactorily despite the fact that one-third of the subjects were living in overcrowded households. In several instances the youths shared bedrooms with grandmothers, mothers, and sisters.

In all the cases, the mother, grandmother, or sister emerged as the dominant figure for these boys. Where parents lived together, the father's role was overshadowed by the mother. In more than 50% of the cases, the father had been absent for most of the patient's life and no meaningful male substitute replaced him in the emotional life of the boy. Most mothers related with pride that they had a close relationship with the patient and pointed to his achievements in feminine pursuits as his special way of being helpful to them. They talked of their sons as good boys, of being interested in them, and of not wanting to hurt them.

Although the exact income was not ascertained in all instances, only one family was currently totally dependent on relief (Aid to Dependent Children). All the other informants indicated they were able to support themselves, meeting at least their minimum needs. The lowest income reported was $40 a week for a family of four, and the highest was $95 a week for a family of three.

In spite of the relative good intelligence of the group as a whole, only four of these youths had a trade—one was a clothes presser, one a candy maker, one an auto repair man, and one a photoengraver. The presser had learned his trade while an inmate of St. Charles School for Boys. Although discharged two years previously, he had never worked at his trade. The candy maker, a boy of 17, had completed sixth grade at 16, while in Sheridan Reformatory for stealing. Since his release three months

1. Immediate and complete withdrawal of the drug.

V 14
1952

previously, he had had a job in his trade for three weeks but had been laid off about a month prior to apprehension by the police. The photoengraver said he had tired of that work and had taken a job as bus boy in a local hotel. The auto repair man had been working for two weeks on a job he had secured after being laid off for two months from a previous job as a spray painter. All these youths had had menial odd jobs, such as shining shoes, porter, and bus boy. Ten of them were unemployed at the time of their court appearances.

There was a defeatist attitude prevalent in relation to employment. The feeling that no matter how hard one tried one would not succeed was repeated frequently in our discussions. The fact that one could not secure employment commensurate with one's ability, education, interest, and aspirations was an accepted fact, and there was a total lack of incentive to achieve except in fantasy, where the patient emerged as a successful person.

In an attempt to learn whether there was an addiction pattern in the family, we made inquiry regarding the use of drugs or alcohol. In two instances older brothers were narcotic addicts, who managed to maintain their habits without coming into conflict with the law. Most of the parents indicated there was social drinking in the home, and liquor was frequently offered to the addict as a substitute for drugs. A brother of one patient was an alcoholic, and one mother admitted she was an alcoholic. One of her sons, older than the one brought into court, was also a narcotic user. In only one situation was a member of the family in a mental institution (Dixon State Hospital).

In response to inquiry regarding police records of members of the family other than the patient, it was learned that in three families, siblings had police records, and one father had such a record. Generally speaking, most of the families were proud of their social behavior and indicated a desire to live acceptable communal lives.

Exploration of social relationships revealed that the boys studied had many acquaintances but few real friends. In only one case, parents indicated that the patient was a member of an organized gang during early adolescence. Few patients at an early age were members of organized social-recreational groups, such as the Boy Scouts or the YMCA. Most of the boys had engaged in some church activities as youngsters, but the experience had not been too meaningful and had not continued into adolescence.

The general description of personality as given by parents and relatives was that of quiet, well-mannered, rather dependent boys who were easily influenced by others and quick to accept leadership. They were passive, fearful youths who shunned aggressive companions, chose quiet games, and in their homes accepted responsibility for tasks such as housecleaning, cooking, and shopping. As addiction developed, they became isolated, restless, moody, and secretive. This behavior did not particularly alarm or surprise most of the mothers, and in almost every case they said it was not a clue to the addiction. Most of the informants stated they had not known of the addiction until the boy was apprehended by police. Their reactions were those of shock, fear, and shame. Mothers in two instances said they had "wanted to die"; if their boys could not be cured, they did not want to live to see them suffer or become criminals. The attitudes of parents were definitely punitive in only two cases. One father, who had little attachment to his son in spite of the fact that he had reared the boy without a mother from the age of 2, said the boy deserved whatever punishment he received, and he would not help him in any way. In the second case, the mother had had her son arrested "to teach him a lesson."

In spite of comments made by parents that they were not aware of their son's addiction until apprehension, most of them had clearly been suspicious, for they revealed that they had prayed for their sons, talked to them of the evils of drugs, selected their friends, and attempted generally to manage their lives. In several instances, they had taken the boys to physicians for help and advice.

The fact was particularly striking that in the court room, and generally in the interviewing situation, the feeling tone expressed by relatives and patients was that of complacency. Mothers wanted their boys "cured" so that they could return home, where they would be carefully watched. Most of the boys, on the other hand, seemed relieved by the jail sentence.

All these youths expressed a desire to break their drug habit, but six of them were repeaters, having had treatment either at the United States Public Health Service Hospital, Lexington, Ky. or during a previous jail sentence. Most of them said they believed their present incarceration would solve their problems of addiction. A few feared the return to their old environments because of temptations and police pressures, for all felt they were "marked men." Only one expressed the desire to leave home, on the basis of his inability to withstand "the jealousy of father."

## REPORT OF CASES

The following case histories are presented to amplify the material given above.

CASE 1.—Frank, age 20, single, was the third-born and only boy in a family of four children. He was graduated from high school at the age of 18 and began to work as a photoengraver, a trade he learned while in school. He tired of this job and five months previous to his arrest had gone to work as a bus boy in a local hotel. He recognized this job was out of keeping with his intelligence and education, but apparently it offered some glamour. He earned $6 a day, which was insufficient to pay for his drugs. His father had died three years previously of heart disease, brought on supposedly by constant, excessive drinking. He had not worked regularly for 10 years prior to his death, and the mother was the main wage earner in the family. The oldest sister completed high school and attended three different colleges. A second sister, age 22, was graduated from high school and married shortly afterward. The youngest sister stopped school at 15, because of pregnancy. The family arranged for her marriage, which was reported as successful. The patient seemed to have had a close attachment to the second sister, for he said he could confide in her and be understood by her. The family described the patient as a "good mixer" who belonged to clubs in high school. He seemed to be a quiet boy who was interested in music and played the clarinet and the piano.

Frank said he started his habit by smoking marijuana while a senior in high school; his friends smoked and he wanted to be like them. After a year he "tried out" heroin with a friend because, he said, he thought it would give him a new experience. Once he started taking the drug he was "hooked," and every thought became centered on securing money for it. His earnings were insufficient for his needs, and six days before his arrest he approached persons in the building where he lived for bottles to sell. His aunt, who lived in the building, appealed to him to stop bothering the tenants. He threatened her with a bottle; when he showed uncontrollable rage, she called the police.

The patient was thin and slight of build, restless, and very tense. He talked rapidly, frequently contradicted himself, and had difficulty answering questions directly when interviewed by a psychiatrist. He said his earliest recollection was of going to kindergarten and the girl friends he had there. Heterosexual activities were begun at the age of 10. The use of drugs minimized his sexual interest. He seemed evasive, insincere, and unreliable, giving the impression of being fearful, insecure, without insight, and with strong tendencies to rationalize his failures. Weak and ineffectual, he was unable to strive for any long-term goals and sought comfort in the use of drugs.

CASE 2.—Edward, age 17, was the youngest of four children. Both parents came from the South but had lived in Chicago for 23 years, since their marriage. Their stated aim was to give their children a "good" life. In order to achieve economic security, both parents worked. They pointed with pride to the educational achievements of their children and the fact that they were well respected in their neighborhood.

The mother, who was fanatically religious and highly emotional, was quick to blame the father for the patient's "downfall." She dominated the household and achieved her goals through hysterical demonstrations. Both in the court room and in the interview she screamed, threw herself on the floor, and said she wanted to die—she could not go on living if her boy was not cured or would be in further trouble.

Edward was short, slight of build, frail appearing, frightened, and anxious. He had failed in two subjects in the second year of high school, but nevertheless had been advanced to the third year. At this time his mother told him that, since he could not do well in school, he should quit and go to work. It was about this time that he began to smoke marijuana. He left school and went to work as a bus boy at a hotel, a job he quit after two months and went to work for his father, delivering fish. He indicated that he liked the job, but the mother felt the father did not supervise him closely enough.

The mother dominated the boy, selected his friends, and refused to let him take part in many of the usual adolescent activities. He went to church, and his mother punished him when he did not return home promptly. He said he realized that she did not want him to get into trouble and that she frequently warned him about taking drugs. He expressed his frustration when he said, "If I could just do something I want to do, like go to dances and different places, but Mother would object."

A timid, dependent, immature boy, not yet ready to assume a role of working and taking responsibility for himself, smoking marijuana apparently gave him a needed release from feelings of inadequacy and longings for fun and freedom. As he explained it, "When I smoke marijuana, I feel like joking with my friends and playing around."

CASE 3.—John, age 18, single, was an only child. He was born of a common-law union, and his father deserted him when he was six months old. John was reared by his mother and a maternal aunt. The family received financial assistance from a public agency until the patient was old enough to enter school, when the mother secured employment.

He spent the first two years of high school at a parochial boarding school in another state. He returned to Chicago and was graduated from a public high school at the age of 17. After graduation, he found it difficult to obtain work "in keeping with his abilities." He did odd jobs around the house to earn his weekly allowance. He was, however, working outside the home at the time of his arrest and was contributing $7 a week to his mother for room and board. Because of an alleged heart condition, he was not permitted to participate in the things he liked most, such as basketball and playing a horn. His mother was overprotective of him but also wanted him to be aggressive. She described him as shy and quiet. John began to smoke marijuana at 16; after a year, together with another boy, began taking heroin.

The psychiatrist described him as a spritely, smiling, animated boy who talked freely and was much at ease. His language was racy and his manner breezy, boastful, and exhibitionistic. As to taking heroin, he said, "Everybody wanted to let everybody else know they knew where to get the stuff, that they were 'hep.'" On several occasions he used cocaine, which, he said, gave him a "good feeling." At these times he practiced "jacking off" (drawing blood into a syringe, injecting it, withdrawing it again, reinjecting it).

John was born out of wedlock, had been rejected by his mother, and apparently had a strong need to be "equal" and do everything others did. Taking heroin, as he put it, was "nothing but wanting to make myself known as somebody who was 'hep.'"

CASE 4.—Leon, age 20, married four months, was an only child. His father died when he was an infant, and he went to live with his maternal grandmother, with whom he slept until he was 7 years old. His mother remarried, and after the grandmother's death he went to live with his mother. His relationship to her has been strained for some time, and he refused to grant permission to see her or in any way inform her of his present difficulties.

His wife, age 19, told us that she met her husband when they were classmates in high school. Although she was graduated, he left school on completion of his third year. He was restless and unhappy in school, but she urged him to continue, without success. He attempted to secure employment and, having failed in this, enlisted in the army. After two and one-half years in service, he was honorably discharged and returned to Chicago, where he married almost immediately. For six weeks he worked regularly and totally supported his wife and himself. When he lost his job, the couple went to live with her parents, where they were accepted and supported. He made little or no effort to secure employment, but his wife was not disturbed by this and both claimed to be happy. They spent most of their time together except for a few hours each evening, when he went to a neighborhood poolroom. The wife accepted this behavior, feeling that she should not monopolize her husband or alienate him from his few male companions.

It was not until he became involved in a fight at the poolroom and was apprehended by the police that his wife learned of his use of drugs. It was her impression that he was not an addict but just an occasional user. She had not noticed any unusual behavior but believed that he was somewhat depressed because in their four months of marriage she had not become pregnant.

In his interview with the psychiatrist, the patient said he had begun to smoke marijuana when he was 16 years old and in the third year at high school, where he had been influenced to try it for the "kick" and was told it was "real nice." During this time he used heroin a few times, but he did not become a regular user until after his discharge from the army. He said he had always been shy and believed that heroin would give him the push and confidence he needed. When he took it he felt "very confident." Then he added "I always say 'shy' because I never want to put to myself that I am afraid." He probably continued to take heroin because it enabled him to relax, to feel free from fear, and to drift along, ignoring his responsibilities to his wife and to society.

## COMMENT

Narcotic addiction of teen-agers is more a social and psychologic than a strictly medical problem. Teen-agers growing up in a large, modern city, with its contrasts of luxury and degradation existing side by side, often feel isolated and lost, without a real place in the total group or a sense of belonging to it. Some of them are bewildered by the economic and social discriminations within a democratic context. Today the adolescent asks why, and he is often obliged to take old values and inadequate answers on faith.

The common reasons young addicts give for taking drugs are curiosity and the fact that their friends are taking them. But the emotionally stable boy will not take dangerous drugs any more than he will drive a "hot rod" 90 miles an hour for excitement. All these boys say drugs give them a "nice" feeling, a feeling of relaxation, comfort, and confidence. However, when the need to have a good feeling is so urgent that one resorts to the use of drugs to get it, he is either very threatened and insecure

or too lacking in courage to withstand stress without some special gratification.

Many teen-agers who have completed high school, or have had to quit to go to work, are idle and aimless, without opportunities for an adequate job, or bored with a very menial one, out of keeping with their intelligence and education. There is no fun or future in washing dishes, selling coal, or being a bus boy. As one youth said, "I don't want just any job; I want something special." Often these young persons are not doing anything they want to do, and they feel defeated without attaining the conventional desires all of them express—to have a good job, to marry, and to own a home and a car.

One boy described his depression and sense of futility when he said, "I don't care no more. I couldn't find a job. I started selling my clothes, and drugs were just something new." Another youth said his friends told him heroin would make him feel "gamer," and he did not want to be a "nobody."

Vogel, an authority on drug addiction, has stated that it is a symptom of a basic underlying personality maladjustment. This may be due to a lack of social and economic status. Many teen-agers apparently take drugs to maintain status with their friends and attain a sense of belonging. Group pressures and a desire for status are not uncommon in adolescent striving, but, for the group deprived of normal acceptable means of achieving some measure of success, these elements become magnified. The youth who has meaningful interpersonal attachments, opportunities for constructive social-recreational outlets, and some possibilities of achieving economic security is not likely to become a drug user. When he is hopeless about the future, has a sense of inadequacy, and lacks object relationships, he is easy prey for the drug peddler, because he wants to be "hep" and not be considered a "square."

Even when the adolescent is constructively aggressive and competitive, this is not enough, if the environment is discriminative and full of cultural discord. Then he may be thoroughly frustrated because he cannot succeed according to the economic standard and culture of the majority group, and he may seek to achieve an artificial self-esteem based on destructive acts.

Still in the process of growing up, and unable to cope with his problems, he may seek comfort in drugs. Marijuana offers him a stimulant that makes him feel competent, and heroin a depressant that decreases his sensitivity to social pressures and to his own deep inadequacies. It enables him to recapture the physical comforts of infancy and the consolation he needs to quiet his fears. It gives him the equivalent of what his mother gave him when he was small, and addiction of the youth is an indication that his parents have failed to supply the love and security he needed. Then all his interests center on procuring drugs by any means. When he takes them, he feels peaceful and carefree.

Essentially passive, dependent, and emotionally immature, many young addicts are not yet ready to take the responsibility parents expect of them. Heroin reduces their feelings of failure and removes their longings for youthful enjoyments, which many of them must forego in a society where there is little time for the youth to become a man. Heroin allows them to have fun and relaxation when their parents have already required them to take care of themselves and behave like competent adults.

Although sex is a powerful drive in most adolescents, young males addicted to heroin lose their sexual interests and are content just to be with other boys, listening to records, or satisfied to do nothing at all. The majority of them do not admit any homosexual interests. As one boy said, "Even if I were dying for drugs, I couldn't work up any nature like that."

Because we do not know any cure for the drug addiction of teen-agers, we need more intensive research on the problem and more extensive programs for prevention through education, whatever way they can best be carried out.

When one considers the magnitude of the problem, one cannot overemphasize the need for further study. During the period from April 2, 1951, to Feb. 5, 1952, of 4,307 addicts appearing in the Narcotic Court,[2] the largest number, 2,221, were discharged. The next largest number, 470, were sentenced to one year; 457 were fined $200 and costs; 316 were transferred to Grand Jury; 241 were granted change of venue; 175 were transferred to Jury Court; and 113 were given probation. Smaller numbers were given sentences ranging from 30 days to 5 years plus a $5,000 fine.

As one way of attacking the problems, the Illinois General Assembly [3] during the 1951 session passed an act appropriating $90,000 for the biennium beginning July 1, 1951, for the treatment and rehabilitation of narcotic addicts, the funds to be administered by the Illinois Department of Public Health. Three centers were to be set up in Chicago. On Nov. 31, 1951, two of these clinics were opened, one at Provident Hospital and one at the University of Illinois College of Medicine. These clinics are devoted to the treatment and rehabilitation of adolescents and young adults with a history of using drugs. Only those who are not physically dependent on drugs and do not require hospitalization are treated in the clinics.

54 W. Hubbard St.

2. Information supplied by Judge Gibson E. Gorman, presiding judge of the Narcotic Court of Chicago.

3. House Bill no. 1257 of the 67th Illinois General Assembly.

---

**Appetite.**—Appetite, on account of its complex nature and vague localization, is a more difficult sensation to define; some persons refer it to the pharynx or esophagus, others to the stomach. It is probably to a large degree acquired rather than inborn like the hunger sensation. That is to say, it is dependent upon previous experience; and conditioned stimuli enter largely into its causation. A new-born infant experiences hunger but probably not appetite. Nevertheless, it appears that there is also a purely gastric element in the production of appetite. For example, alcohol, by stimulating the gastric mucosa, causes a sensation of warmth within the stomach, raises gastric tone and arouses appetite. According to Carlson hydrochloric acid does likewise, and the flow of gastric juice induced by the taste of food may well serve the purpose of augmenting the appetite in the initial stage of digestion. It is well known that appetite is often greatly increased after the first few mouthfuls have entered the stomach, and though the effect produced by the taste of the food is difficult to exclude, the fact points to a gastric element.—Charles Herbert Best, M.D., and Norman Burke Taylor, M.D., The Physiological Basis of Medical Practice, Baltimore, Williams & Wilkins Company, 1950, p. 604.

# CLINICAL NOTES

## TETANUS RESULTING FROM FOREIGN BODY IN THE NOSE

### REPORT OF A CASE

*Robert B. Tudor, M.D., Bismarck, N. D.*

This case is reported because of the rarity in the literature of tetanus resulting from a foreign body in the nose. As no demonstrable portal of entry can be found in from 20 to 35% of the cases,[1] it is possible that foreign bodies in the nose have been overlooked as the site of infection.

In 1940, Spaeth,[2] in summarizing 33 cases of tetanus treated at Iowa University Hospital, reported a case in a 2½-year-old child, who had mild symptoms of tetanus, possibly due to pebbles in the nose, and who recovered. In 1950, Linker, Rosenthal, and Golomb [3] reported a case from Fordham Hospital, New York City, in which a 17-month-old Negro child was admitted with profuse nasal discharge and weakness. Frequent irrigations brought a paper match stick out of one nostril. The child died from tetanus the fifth day after admission. Clostridium tetani was cultured from the match stick. The average incubation period of 847 cases of tetanus when the site of infection is in the head and neck is 9.6 days.[4]

#### REPORT OF CASE

A 4½-year-old white girl was admitted to the hospital on March 15, 1949. Her past history was contributory in that she had received no immunizations. During 1948, she had had pertussis, chickenpox, and measles in succession. Since that time her health had been good. On March 12, 1949, she became ill with a stiff neck, and it was noted that her mouth was drawn to one side. Soon she could not open her mouth, and the next day her extremities became stiff and began to tremble. There was no history of exposure to acute or chronic illness and no history of recent injury. Examination disclosed a well-nourished, acutely ill child, with rigidity of all muscles. The head was drawn back, the legs and feet were extended rigidly, and the arms also were stiff. The abdominal muscles were board-like. She talked clearly and was cooperative. When stimulated, she showed tremors of all muscles. The eyes and ears were normal, and the throat was slightly injected. The heart and lungs were clear. The genitalia were normal. No abrasions or old injuries were found on the skin. On examination of the nose, a large purulent mass was visualized well back in the left nostril. When this was removed it was found to be a piece of cloth. A purulent looking ulceration was left at the site of the foreign body in the nose. Unfortunately, this area was not cultured. Accessory clinical findings were temperature 99.8 F, rectally; urine negative; hemoglobin 73%; leukocytes 8,600, with polymorphonuclears 57% and lymphocytes 41%.

After a skin test was found to be negative, 100,000 units of tetanus antitoxin was given intramuscularly. The child was then sedated with 2½% thiopental (pentothal®) solution, which was added as indicated to a continuous intravenous drip of 5% glucose solution. Penicillin was also administered intravenously for the first week of the illness. From 20 to 30 cc. of thiopental sodium was necessary daily until March 25, 1949; 12 cc. was used on March 25, 1949, 9 cc. on March 26, 10 cc. on the 27th, 5 cc. on the 28th and 29th, and 1 cc. on the 30th, after which administration could be discontinued. On March 28, 1949, the child's mouth became less rigid and she was able to chew some gum. Her muscles still became rigid when she was touched, as late as March 27. She was taking soft foods well on March 31, and intravenous administration of penicillin was discontinued. This same day physical therapy was begun for her legs, which remained stiff. Her convalescence was complicated by a mild serum sickness on the eighth hospital day and by phlebitis of the left saphenous vein on April 4. On April 9, her 25th hospital day, she was walking and the nasal ulceration was well healed; she was discharged two days later. She was seen again on May 2, and, at that time, there was no evidence of muscular disability.

#### SUMMARY

A case of tetanus resulting from a foreign body in the nose is reported. Only one other case was found in the literature in which tetanus unquestionably resulted from a nasal injury.

From the Department of Pediatrics, Quain and Ramstad Clinic.

1. Pratt, E. L.: Clinical Tetanus: A Study of 56 Cases with Special Reference to Methods of Prevention and a Plan for Evaluating Treatment, J. A. M. A. **129**: 1243 (Dec. 29) 1945. Spaeth, R.: Therapy of Tetanus: A Study of 276 Cases, Arch. Int. Med. **68**: 1133 (Dec.) 1941. Clinical Conference: Conference at the St. Louis Children's Hospital, July 30, 1948, J. Pediat. **33**: 630, 1948.

2. Spaeth, R.: A Clinical Study of Tetanus, Am. J. Dis. Child. **60**: 130 (July) 1940.

3. Linker, M.; Rosenthal, I. M., and Golomb, J.: Tetanus Resulting from a Foreign Body in the Nose, New York State J. Med. **50**: 1620, 1950.

4. Spaeth, R.: Serum Therapy of Tetanus, with Special Reference to Course of Antitoxin Titers in the Blood After Treatment with Specific Serum, Am. J. Dis. Child. **61**: 1146 (June) 1941.

## SPONTANEOUS RUPTURE OF THE SPLEEN IN MALARIA

### REPORT OF A CASE

*Lieut. Col. Richard C. Shrum*
*Lieut. Col. Francis W. Lanard*
*and*
*Major Daniel C. Wilkerson, (MC)*
*United States Army*
*Fort Leavenworth, Kan.*

Spontaneous rupture of the spleen is a rare complication of malaria. Leighton [1] accumulated 72 cases from the literature between 1842 and 1917. In a masterful review of the American and foreign literature between 1917 and 1948 Hershy and Lubitz [2] found only 64 cases, 25 of which had occurred during naturally acquired malaria and 39 of which had occurred during therapeutic malaria. In their article they reported one additional case occurring in naturally acquired malaria, and Lubitz [3] subsequently reported three more. Because this subject is mentioned so infrequently in the literature, and in the American literature especially, the following case is considered worthy of record.

#### REPORT OF CASE

A 20-year-old white soldier, who had returned from Korea on rotation six weeks previously, was admitted to the United States Army Hospital, Fort Leavenworth, Kan., on Aug. 15,

From the United States Army Hospital, Fort Leavenworth, Kan.

1. Leighton, W. E.: Spontaneous Rupture of the Malarial Spleen, with Abstract of Cases Reported Between 1842 and 1921, Ann. Surg. **74**: 13 (July) 1921.

2. Hershy, F. B., and Lubitz, J. M.: Spontaneous Rupture of Malarial Spleen: Case Report and Analysis of 64 Reported Cases, Ann. Surg. **127**: 40-57 (Jan.) 1948.

3. Lubitz, J. M.: Pathology of the Ruptured Spleen in Acute Vivax Malaria, Blood **4**: 1168-1176 (Oct.) 1949.

V 14
1952

1951, with the history of fever, chills, headache, and malaise of four days' duration. Temperature, pulse rate, respiratory rate, and blood pressure on admission were 103.4 F, 88, 20, and 120/80, respectively. The spleen was not palpable, and the remainder of the physical examination revealed nothing remarkable. Routine blood cell count and urinalysis disclosed no abnormalities. Because the patient had been receiving chloroquine phosphate prophylactically till he left Korea, a blood smear was examined for malaria parasites, and ring forms of Plasmodium vivax were found. Malarial therapy was begun with chloroquine phosphate, and after 36 hours the patient was asymptomatic. He was to have been dismissed Aug. 20, but on Aug. 19, he began having slight diarrhea associated with nausea. At about 3 p. m. he vomited and then got up to go to the bathroom. En route he "fainted"; when aroused he complained of mild pain in his left upper abdominal quadrant. Later that evening he became sweaty, cold, and pale. His pulse rate was 120 per minute and blood pressure 70/40. The red blood cell count was 2,500,000 and hemoglobin 8 gm. There had been no hematemesis, and no evidence of blood could be found in the rectum. Percussion of the abdomen produced a persistent dulness in the left flank, regardless of the patient's position. A diagnostic paracentesis immediately produced a syringeful of bright red blood. A presumptive diagnosis of rupture of the spleen was made, and during the next eight hours the patient was given 5 pt. (950 cc.) of blood, after which exploration was performed through a left rectus-splitting incision extending from the costal margin to below the umbilicus. When the peritoneum was opened, the peritoneal cavity was found to contain much free blood and many clots. The spleen was moderately enlarged, and a subcapsular hematoma was present. A splenectomy was done, after which all the clots and free blood that could readily be scooped out with the hand and aspirated with the suction apparatus were removed; the abdomen was closed without any drains. The patient had an uneventful recovery and was sent on convalescent leave on the 12th postoperative day.

*Pathological Observations.*—The spleen measured 17 by 11 by 5.5 cm. The capsule was lifted from the entire surface except about the hilar blood vessels. The surface was granular and pitted and focally covered with blood clots. The cut surface revealed a homogeneous gray parenchyma with no discernible pulp markings.

Microscopic examination revealed a subcapsular hemorrhage with a diffuse infiltration with polymorphonuclear neutrophilic leukocytes. The lymphoid follicles were widely separated and had the usual architecture. The red pulp reticulum was swollen, and there were greater numbers of the reticulum cells. The pulp was not particularly crowded with red blood cells but was full of large numbers of polymorphonuclear eosinophilic leukocytes. There was considerable brown, hemosiderin-like pigment in the reticulum cells and in the pulp sinuses. Giemsa stains on touch preparations from the pulp and on the microscopic slides revealed no parasites.

### COMMENT

The changes in the spleen were not typical of any specific process but were compatible with a diagnosis of malaria or infectious mononucleosis with spontaneous rupture. The absence of parasites was not important in view of the treatment the patient received, and it may be assumed that the proved clinical malaria was responsible for his splenomegaly and spontaneous rupture.

When the patient returned from convalescent leave, Oct. 1, blood was drawn for heterophil agglutination, with a subsequent report of "no titer."

### SUMMARY

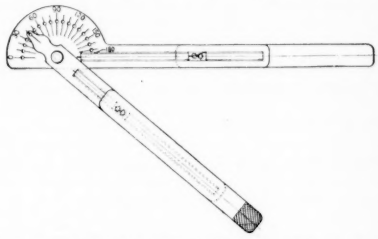
A case of spontaneous rupture of the spleen in a patient with malaria due to Plasmodium vivax is reported, with recovery following splenectomy.

## AN IMPROVED GONIOMETER FOR ARTHROMETRY

*Harold Raoul Wainerdi, M.D., New York*

A goniometer [γωνία = angle + μέτρον = measure] is a modified protractor used in orthopedics and rheumatology to measure joint angles and so to evaluate motion. The arms of the instrument are aligned with the long axes of the articulating bones that comprise the joint to be examined. The subtended angles are measured on the usual circular scale. Such data properly secured are objective and are invaluable in assaying joint function and in planning and evaluating surgical and medical treatment.

Goniometers presently in use have certain limitations. Because the arms are not adjustable in length, they may be either too long for measuring certain joints or too short for convenient use in others. The scale is incremented in extremely small units, often as small as 1 degree; consequently, since the scale is usually small, it is difficult to read. As will be discussed below, joint measurements in units smaller than 10 degrees are not usually significant. Most goniometers presently in use are opaque, so that, in measurements of angles subtended by small bones (as at the metacarpophalangeal and the interphalangeal joints), the axes are not accurately located. Finally, the central riveting arrangements may be slack and thus allow motion of the two arms between the adjustment of the device and reading of the scale. These features may introduce significant errors in joint measurements.



Improved goniometer for arthrometry (approximately 38% of full size).

In this improved instrument (see the accompanying figure) have been incorporated features that make it an instrument of increased reliability and convenience. It is made of transparent plastic; a firm rivet and a detenting device fix the arms without danger of slipping, at 10-degree intervals, so that angles are measured to the nearest 10 degrees. The scale is easily read because it is possible to use larger figures, since fewer are given. When collapsed, the arms allow convenient measurement of small articulations; when the arms are extended, the angles of larger joints may be measured more accurately than with currently used goniometers.

From the Department of Medicine, The Hospital for Special Surgery. Assistant Physician at the Hospital for Special Surgery; Assistant Physician, Sea View Hospital.

### COMMENT

It may seem that scale graduations of 10 degrees, which permit a determination of the angle at a joint to within 5 degrees, are too gross for clinical work. However the nature of the measuring process precludes significant observation to a greater precision. Since measurements are taken along bone axes enveloped in muscle, tendons, skin, and other tissues, a considerable error is always implicit in joint measurements. It must be obvious that increments of 1 or 2 degrees, as on most goniometers, are not significant figures and that data determined from any goniometer have a precision limited by the observational process rather than by the least count of the scale. It is also of great importance that the alignment of the instrument to the joint be anatomically accurate and that the positions of patient and examiner be such that errors of parallax be avoided.

### SUMMARY

A goniometer modified by extensible arms and a detenting protractor is described, and its advantages in measuring joint motion are briefly outlined.

502 Park Ave.

## PERIAURICULAR BACTEROIDES INFECTION, PROBABLY ARISING IN THE PAROTID

### REPORT OF A CASE

*Walter E. Heck, M.D.*
*and*
*Robert C. McNaught, M.D., San Francisco*

The incisurae Santorini are two of three fissures in the anteroinferior wall of the cartilaginous external auditory canal.[1] Their importance as a point of breakthrough of parotid infection, especially an abscess, is stressed in most standard ear, nose, and throat textbooks.[2] Such an occurrence is, however, rarely seen.

This report concerns a 2½-year-old girl in whom such a sequence of events took place, plus the development of periauricular cellulitis and a subtemporal abscess. Of additional interest is the fact that the infecting organism was of the Bacteroides group, not usually thought of in relation to ear conditions. Recovery followed surgical and massive antibiotic therapy, particularly the use of terramycin.

### REPORT OF A CASE

D. B., a 31-month-old white girl, was first seen in November, 1950, with the chief complaint of a swelling of the left side of the face and head, of two weeks' duration. Her mother stated that 13 days previously, without history of previous ear disease or of preceding cold, the patient began to complain of pain in the left ear. Thereafter the left side of the face and head became progressively more swollen. Hot packs were applied, and a neighbor provided an infra-red lamp. As a consequence of the misuse of the latter, the left ear was burned superficially. After three days the left ear had suddenly begun to discharge. A physician was then seen, who administered a penicillin injection on three successive days and had then prescribed a sulfonamide mixture. The patient's urine became very dark after the start of the sulfonamide therapy, according to the mother. One week before the patient was seen by us, another physician was called, who made a diagnosis of mumps. The swelling meanwhile had extended forward, and 24 hours before we saw the child the left eyelids had become swollen, closing the palpebral fissure. Throughout the illness the temperature had reportedly been 104 to 105 F rectally.

The past history and family history were noncontributory except that the child had never had any immunizations. On admission to the hospital her temperature was 39.2 C (102.2 F) rectally, pulse rate 120, and respiratory rate 28. She weighed 27 lb. (12.2 kg.). The left side of her face and head was markedly swollen, from about 1 in. (2.5 cm.) above, behind, and below the left ear, pushing the auricle downward and forward, and extending anteriorly to the nose. The left eyelids were swollen shut. The left ear canal exhibited a slightly bulging, reddish area anterosuperiorly and contained some muddy debris. Farther in was seen an essentially normal tympanic membrane. A large firm globule of cerumen was removed from the right ear canal, revealing a normal tympanic membrane. The parotid duct orifices were not remarkable. The only other positive physical finding was the surprisingly alert, rational appearance and behavior of the youngster, despite the fever and deformity.

Laboratory studies revealed a hemoglobin value of 9.9 gm. per 100 ml., red blood cell count of 3,590,000 per cubic millimeter, and total leukocyte count of 32,050 per cubic millimeter, with 71% neutrophils (8 banded and 63 segmented), 20% lymphocytes, and 9% monocytes. The urine was normal. X-rays of the mastoid processes were technically unsatisfactory, but were not suggestive of acute mastoiditis.

In the hospital the patient's temperature continued upward, reaching 41.1 C (105.3 F) rectally four hours after admission. She was given 500 mg. of terramycin on admission, as the elixir, with 250 mg. every six hours thereafter. Because of the apparent overwhelming infection, of unknown bacteriologic causation, we gave 400,000 units of penicillin and 0.5 gm. of dihydrostreptomycin intramuscularly in preparation for surgical intervention. Fourteen hours after the child's admission, under general anesthesia, myringotomy was done, without revealing abnormal secretion. Incision and drainage above and behind the ear released foul pus under pressure, which spurted from the incision as it was made. This subtemporal abscess contained about 90 ml. of pus. Two Penrose drains were inserted under the temporal muscle as far forward as possible.

The patient's temperature became normal within 12 hours, and except for slight fluctuations remained so thereafter. The swelling of the tissues of the left side of the face and head subsided rapidly, except in the area of the left parotid. A transfusion of 200 ml. of whole blood was given because of the anemia.

Culture of the pus from the abscess revealed a member of the Bacteroides group. Sensitivity studies were inconclusive, because of poor growth on control mediums. On receipt of this report, treatment with all anti-infective drugs except the terramycin was stopped. The drains were removed and the patient left the hospital on the fifth postoperative day. Terramycin therapy, 250 mg. every six hours, was continued for four days at home.

The incision healed rapidly. The left parotid swelling persisted, sufficiently so that x-ray therapy was considered. Six weeks postoperatively the parotid appeared normal, however, and this therapy was not used. Follow-up examination 11 months postoperatively revealed normal structures. The patient's mother stated she could no longer find the site of the incision.

### COMMENT

In retrospect, the obvious sequence of events here was, first, otalgia, due to parotitis (not a rare symptom complex), followed by abscess formation in the parotid. Posterior extension occurred, with rupture via the fis-

From the Division of Otorhinolaryngology, Department of Surgery, Stanford University School of Medicine.

1. Schaeffer, J. P., editor: Morris' Human Anatomy: A Complete Systematic Treatise, ed. 10, Philadelphia, The Blakiston Company, 1942, p. 1224.

2. Ballenger, W. L.; Ballenger, H. C., and Ballenger, J. J.: Diseases of the Nose, Throat and Ear, ed. 9, Philadelphia, Lea & Febiger, 1947, p. 562. Jackson, C., and Jackson, C. L., editors: Diseases of the Nose, Throat, and Ear, Including Bronchoscopy and Esophagoscopy: With the Collaboration of 64 Outstanding Authorities, Philadelphia, W. B. Saunders Company, 1945, p. 199. Lederer, F. L.: Diseases of the Ear, Nose and Throat; Principles and Practice of Otorhinolaryngology, ed. 4, Philadelphia, F. A. Davis Company, 1943, p. 4.

V 14
1952

sures of Santorini and discharge from the ear canal. At about this point a clinical diagnosis of mumps was made. The infection continued to extend, posteriorly forming a subtemporal abscess and anteriorly cellulitis sufficiently extensive to obliterate the palpebral fissure. The choice of terramycin for therapy was a fortunate one, in view of the subsequent isolation of a Bacteroides organism.[3] The clinical course proved its effectiveness.

Clay and Webster Streets.

3. Rantz, L. A.: Bacteroides Endocarditis: Report of a Case Successfully Treated with Terramycin, J. A. M. A. **147**: 124 (Sept. 8) 1951.

# COUNCIL ON PHARMACY AND CHEMISTRY

## NEW AND NONOFFICIAL REMEDIES

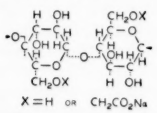
*The following additional preparations have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.*

R. T. STORMONT, M.D., *Secretary.*

**Sodium Carboxymethylcellulose.**—Thylose Sodium (Jackson-Mitchell).—$(C_6H_{11}NaO_7)_x$.—M.W. about 330,000.—Sodium carboxymethylcellulose is prepared by the reaction of alkali cellulose with sodium monochloroacetate according to the following equation:

$$RONa+ClCH_2COONa \rightarrow ROCH_2COONa+NaCl,$$

where R represents the cellulose structure. The reaction conditions are chosen to give about 0.8 of a sodium carboxymethyl group ($NaO_2C-CH_2-$) for each anhydroglucose unit in the cellulose molecule. The structural formula of sodium carboxymethylcellulose may be represented as follows:




*Actions and Uses.*—Sodium carboxymethylcellulose is a synthetic hydrophilic colloid gum. It is similar to methylcellulose in forming a soft bulk in the bowel after oral ingestion. Sodium carboxymethylcellulose differs in its action from methylcellulose in that it is insoluble in gastric juices. It is a satisfactory and desirable adjunct to reeducation in the treatment of chronic constipation.

*Dosage.*—The usual dose is 1.5 gm. three times daily with meals, accompanied by one or two glasses of water.

*Tests and Standards.*—

*Physical Properties:* Sodium carboxymethylcellulose is a white to light buff, odorless, hygroscopic powder. On heating, it browns between 226 and 228°, and chars between 252 and 253°. A 1% solution has a viscosity between 1300 and 2200 centipoises, and a pH between 6.5 and 8.0.

*Identity Tests:* Dissolve about 1 gm. of sodium carboxymethylcellulose in 100 ml. of water at 45°: a heavy, mucilaginous, opalescent solution results. To 5 ml. of the solution add 8 ml. of alcohol: the solution becomes hazy *(presence of carboxymethylcellulose).*

Add 10% hydrochloric acid to 10 ml. of the 1% sodium carboxymethylcellulose solution until the pH is 0.5: a fine, white, cloudy precipitate forms *(presence of carboxymethylcellulose and distinction from methylcellulose).*

Boil 5 ml. of the 1% sodium carboxymethylcellulose solution for 5 min.: no precipitate forms *(distinction from methylcellulose).*

Reflux a 5 ml. portion of the 1% sodium carboxymethylcellulose solution with 5 ml. of hydrochloric acid for 30 min. Cool the mixture to room temperature and neutralize the excess hydrochloric acid with 10% sodium hydroxide. Add 2 or 3 drops of this solution to 5 ml. of hot alkaline cupric tartrate T.S.: a yellow to bright red colloidal precipitate forms *(presence of reducing sugar).*

Heat a platinum wire in the outer cone of a Bunsen burner flame until the flame is colorless. Dip the wire into a 1% solution of sodium carboxymethylcellulose and again heat it: the flame is a brilliant yellow *(presence of sodium).*

*Assay:* (Sodium) Carefully ash about 1 gm. of sodium carboxymethylcellulose, accurately weighed. Add 1 ml. of sulfuric acid and heat cautiously to dryness. Repeat the addition of sulfuric acid and heating until the mass is entirely white. Heat the crucible in a muffle furnace at 700° for 1 hour, cool the crucible in a desiccator and weigh. Each gram of sodium sulfate formed is equivalent to 0.3238 gm. of sodium and 4.626 gm. of sodium carboxymethylcellulose. The amount of sodium present is about 7%.

(Degree of Substitution) Dry about 50 mg. of glycolic acid in a desiccator over calcium chloride for 24 hours. Transfer 25 mg. of the acid, accurately weighed, to a 250 ml. volumetric flask, fill to the mark with water, and mix. Transfer exactly 0.2, 0.5, and 1 ml. of this solution to separate test tubes (20 × 2 cm.) and add 20 ml. of color reagent (0.01% 2,7-dihydroxynaphthalene dissolved in sulfuric acid, prepared at least 24 hours before using in order that the initial color will have time to disappear). Heat the tubes in boiling water for 20 min., cool them, and transfer the solutions to 50 ml. volumetric flasks, rinsing the tubes with three 5 ml. portions of water and adding the rinsings to the flasks. Cool the flasks and contents to room temperature, and make up to volume with water. Again cool to room temperature. Read the color of the standards at 5400 Å with a Beckman spectrophotometer against a blank of 20 ml. of the color reagent treated in the same fashion as the standards. Plot the concentration of glycolic acid in the aliquot taken versus the spectrophotometer readings to give a standard curve. Check this curve each week, if the reagents are retained.

Grind the sample to be analyzed, to pass a 20 mesh sieve, mix it thoroughly, and dry at 105° for 4 hours. Transfer to a dry 250 ml. Erlenmeyer flask with a standard-taper, ground-glass joint about 35 mg. of the dry product, accurately weighed. Add 25 ml. of 6% sodium hydroxide and shake the flask until the sample dissolves completely. Wash down the neck and sides of the flask with 25 ml. of water. Add 36 ml. of sulfuric acid. Reflux the material for 3.5 hours, cool to room temperature, transfer to a 100 ml. volumetric flask, and dilute to the mark with 50% sulfuric acid. Prepare a reagent blank consisting of 25 ml. of water and 36 ml. of sulfuric acid, and treat it in the same manner as the unknown samples. Pipet 1 ml. of the final unknown and blank solutions into test tubes and add 20 ml. of the color reagent. Heat the tubes in boiling water for 30 min. Proceed as directed in the preparation of the standard curve starting with, ". . . . cool them, and transfer the solutions to 50 ml. volumetric flasks . . ." Read the concentration of glycolic acid corresponding to the absorption from the calibration curve. Calculate the degree of substitution from the equations: A = (100 × wt. glycolic acid in gm. in the aliquot) ÷ wt. of sample in gm.; degree of substitution = 162 A ÷ (76-80 A), where 76 is the molecular weight of glycolic acid, 162 is the molecular weight of the anhydroglucose unit of cellulose, and 80 is the net increase in the weight of the anhydroglucose unit of cellulose for each sodium carboxymethyl group substituted. The degree of substitution is about 0.8.

**Dosage Forms of Sodium Carboxymethylcellulose**

TABLETS. *Identity Tests:* Crush 10 tablets and pass the powder through a 20 mesh sieve. The powder responds to the identity tests in the monograph for Sodium Carboxymethylcellulose.

*Assay:* Perform the assays on tablets ground to pass a 20 mesh sieve and dried at 105° for 4 hours.

(Sodium) On an amount of powdered tablets, accurately weighed, equivalent to about 1 gm. of sodium carboxymethylcellulose, perform the assay for sodium as described in the monograph for Sodium Carboxymethylcellulose. The amount of sodium present is about 7% of the labeled amount of sodium carboxymethylcellulose.

(Degree of Substitution) On an amount of powdered tablets, accurately weighed, equivalent to about 35 mg. of sodium carboxymethylcellulose, perform the assay for degree of substitution as described in the monograph for Sodium Carboxymethylcellulose. The degree of substitution is about 0.8 on the basis of the labeled amount of sodium carboxymethylcellulose.

Jackson-Mitchell Pharmaceuticals, Inc., Los Angeles

*Tablets Thylose Sodium:* 0.5 gm.

**Diphtheria and Tetanus Toxoids with Pertussis Vaccine, Combined** (See New and Nonofficial Remedies 1951, p. 394).

Eli Lilly & Company, Indianapolis

*Diphtheria-Tetanus Toxoids and Pertussis Vaccine Combined:* 1.5 cc. vials (one immunization) and 7.5 cc. vials (five immunizations). 50,000 million *H. pertussis* organisms in each cubic centimeter, with diphtheria and tetanus toxoids. Preserved with thimerosal 1:10,000.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
*Edited by* . . . . . AUSTIN SMITH, M.D.
*Associate Editor* . . . . . JOHNSON F. HAMMOND, M.D.
*Editor for Medical Literature Abstracts* . GEORGE HALPERIN, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

## HYPOTHYROIDISM, A GERIATRIC PROBLEM

In a recent paper Kimble and Stieglitz [1] emphasize that the most significant potentialities of geriatric medicine lie in the area of preventive or anticipatory therapy during the years of senescence. Any dysfunction that tends to accentuate or accelerate deprivation, they believe, must be detected early and treated accordingly.

The more or less gradually diminishing thyroid function presents one such problem. The basal metabolic rate changes appreciably with aging because of diminished needs of the organism. When the basal metabolic rate reaches a level of −20% clinical evidences and myxedema appear as a rule. The differentiation between hypometabolism as such and hypothyroidism is based both on basal metabolic rate and on certain clinical evidences. Frank myxedema is rare in the United States, especially in the aged. Monroe [2] found an incidence of 0.007% in 8,000 hospital patients over 61. This disease is manifested by puffiness of the face and eyelids; edema of the tongue and larynx; dry, rough skin that feels thickened; dry, brittle hair; apathy and mental and physical inertia; chronic constipation; stubborn anemia; depressed basal metabolic rate, lowered serum protein-bound iodine, and elevated serum cholesterol. The authors are concerned with the milder cases of hypothyroidism in the aged, which they believe to be much more frequent than has been hitherto recognized. Symptoms of hypothyroidism frequently pass unnoticed because of their gradual onset and because they are accepted by both the patient and the physician as normal phenomena attendant on the process of aging. The importance of early recognition of hypothyroidism is stressed, because its correction restores the patient's zest for living and his productivity and theoretically may retard degenerative processes, such as atherosclerosis.

Thus Morrison [3] regards atherosclerosis not as an inevitable process accompanying advancing age but rather as a metabolic error and as such a preventable process. Among the factors incriminated in the production of atherosclerosis, he lists imbalance and deficiencies of endocrine function, implicating the thyroid and the sex hormones.

The earliest symptoms of hypothyroidism are due to deceleration of the oxidative processes and consist of diminished tolerance to cold, mental sluggishness, and a lack of physical energy. A basal metabolic rate lower than −15 is suggestive, but definite diagnosis must rest on the therapeutic test, namely, the amelioration of symptoms and signs following replacement therapy. Later and more pronounced symptoms are caused both by the lowered oxidative processes and by specific effect on various organs. These symptoms, according to Rose,[4] are as follows: (1) vague pains, aches, and stiffness in the back and extremities; (2) indigestion, flatulence, constipation, anorexia; (3) menorrhagia, metrorrhagia, amenorrhea, dysmenorrhea, sterility, and frigidity; (4) angina and constrictive circulatory symptoms; (5) schizoid or anxiety states, insomnia, abnormal drowsiness, deafness, and (6) anemia resistant to therapy.

Hypothyroidism is to be strongly suspected in the presence of the above symptoms, a low basal metabolic rate, elevated serum cholesterol, and a serum protein-bound iodine level less than 3.0 μg. Amelioration of symptoms following administration of the thyroid confirms the diagnosis.

The work of Kountz and Chieffi [5] offers objective evidence that correcting hypothyroidism in elderly persons retards senile degeneration. They noted clinical improvement from adequate thyroid therapy in patients suffering from degenerative changes and exhibiting a lowered basal metabolic rate. There was a retardation of the degenerative process in the treated patients and a progression of degenerative changes in the persons treated only symptomatically.

In a group of 82 patients 40 years of age or older and suffering from hypothyroidism, Kimble and Stieglitz [1] noted that the most frequent symptom was fatigue. Diminished cold tolerance was another prominent symptom, particularly among the aged. There was also a tendency to gain weight, persistent dryness of the skin and hair, muscular aches and pains, poor memory, palpitation, and chronic constipation. Administration of small doses of U. S. P. desiccated thyroid was followed by a return to mental alertness and physical vigor. Cold tolerance improved, and the skin and hair lost their dry, coarse texture. The therapeutic success, these authors stress, depends on accurate dosage and employment of a small initial dosage and the avoidance of overmedication.

If involution of the thyroid is a physiological reaction to diminished bodily requirements for thyroxine, as some investigators believe, then stimulation of thyroid activity to a level appropriate to earlier life would be irrational. However, the rationale of replacement therapy finds support in more than one field of geriatric practice.

1. Kimble, S. T., and Stieglitz, E. J.: Hypothyroidism: A Geriatric Problem, Geriatrics **7**: 20-31 (Jan.-Feb.) 1952.

2. Monroe, R. T.: Diseases in Old Age: A Clinical and Pathological Study of 7,941 Individuals over 61 Years of Age, Harvard University Monographs in Medicine and Public Health, no. 11, Cambridge, Mass., Harvard University Press, 1951.

3. Morrison, L. M.: Arteriosclerosis: Recent Advances in the Dietary and Medicinal Treatment, J. A. M. A. **145**: 1232-1236 (April 21) 1951.

4. Rose, E.: The Diagnosis and Treatment of Thyroid Disease, M. Clin. North America **26**: 1711-1737 (Nov.) 1942.

5. Kountz, W. B., and Chieffi, M.: General Oxidative Processes with Relation to Degenerative Changes in the Body, Geriatrics **2**: 344-358 (Nov.-Dec.) 1947.

V 14
1952

## MATCHING PLAN FOR INTERNSHIPS

In this issue, a report by the National Interassociation Committee on Internships on the operation of the matching plan this year is reviewed (page 680). The plan was adopted as the official method for the appointment of interns beginning their services this July and was supported by all organizations directly interested in intern training, including the Council on Medical Education and Hospitals, the Association of American Medical Colleges, and the American Hospital Association.

The plan worked very successfully in spite of some initial difficulties. Well over 90% of students were appointed to internships of their first or second choice, and, in a comparable percentage of hospitals, interns appointed had been listed by the hospitals as first choice candidates or first alternates. Considering the fact that this was the first year that the matching plan had been in operation, the results exceeded the expectations of the sponsoring organizations. The article points out further that a high proportion of the students who were "matched" with hospitals of their second choice failed to receive appointments to hospitals they had ranked first in their list because the internships in these hospitals had already been filled with candidates the hospital had preferred. Others receiving appointments to hospitals listed as second choice were eliminated as acceptable candidates by the hospitals that the applicants had ranked first in their preference list.

An interesting feature of the plan is that it is entirely self-supporting. Funds for its operation are received through fees from the students and hospitals participating. Member organizations of the National Interassociation Committee do not contribute toward meeting the costs of the matching program except to the extent that they defray the travel costs of their representatives to the committee meetings.

Attention is called to the fact that the plan is a method for appointing interns and that it does not propose to distribute interns nor to limit the number of interns a hospital may appoint. It is evident that the more basic problems relating to intern training are in no way affected by the matching plan. With the 795 hospitals participating in the plan offering a total of 10,414 internships and with 5,681 students making applications for appointment through the matching plan, it was evident to begin with that many hospitals would not be able to fill their requirements. The staffs of hospitals that were unsuccessful in appointing the interns they desired this year should keep in mind the primary purpose and function of the plan, which is simply to facilitate the appointment procedure and to relieve students from undue pressure in making a decision as to the hospital of their choice. To blame the plan for the hospital's lack of success in appointing a house staff is to misunderstand completely the principles by which the plan operates.

The matching plan appears to offer the best available approach to the perennial problem of internship appointments and certainly is to be preferred to other methods tried in the past. It offers the maximum freedom of choice for both the applicant and the hospital in considering appointments. It provides an orderly procedure by which appointments are made, and it removes the element of pressure for a hurried decision on the part of either the hospital or the student. Through the cooperative efforts of the participating organizations, the students themselves, and the hospitals conducting intern training, the matching plan will undoubtedly continue to be improved on. In view of its initial success and the advantages it provides to hospitals and students alike, its acceptance as the method of choice in the appointment of interns seems assured.

## THE THYROID AND THE NOSE

For several decades rhinologists and endocrinologists have been aware of a relation between thyroid deficiency and nasal disease. That the connection between the thyroid gland and the nasal cavity is real and not merely fortuitous has been confirmed on a number of occasions by various investigators. Recently Proetz,[1] impressed by the frequency with which hypothyroidism suggested itself as a causative factor in nasal disease and headache, described his experiences with 130 patients, all of whom were selected for study because the diagnosis of hypothyroidism was reasonably certain, confusing complications did not exist, and response to thyroid extract therapy was demonstrable. The average basal metabolic rate of the pretreated group varied from –17.5% to –21.6%.

In these patients deficient in thyroid hormone, neither red nor pale coloration of the nasal mucous membrane was pathognomonic, for such hues are also characteristic of other nasal disorders. Although colds were not severe, they were interminable; low grade vasomotor reactions followed the slightest and most varied stimuli. Histological sections of the nasal mucous membrane showed minor chronic inflammatory changes. Asthenia, chilliness, and myxedema occurred rarely, while approximately half of the 130 patients complained of headache. A characteristic feature was the inability of the nasal cavity to respond to conventional therapy. Contrariwise, a high percentage of the patients evinced striking clinical improvement after treatment with thyroid extract; moreover, when this was withdrawn, the offending nasal symptoms recurred.

These studies suggest that patients who are deficient in thyroid hormone and in whom nasal obstruction and headache are prominent symptoms may tend to nasal infection and nasal allergy. These entities can often be corrected, or at least influenced, by the administration of thyroid extract alone. Widespread recognition of the relationship of the thyroid gland and the nasal cavity depends on the awareness not only of rhinologists and endocrinologists but also of other participating medical groups. Variable and vague though the symptoms may be, the basal metabolic rate is helpful, if not infallible, in distinguishing patients suitable for treatment with thyroid extract. A low basal metabolic rate is presumptive evidence; a therapeutic test is conclusive.

1. Proetz, A. W.: The Thyroid and the Nose, Ann. Otol., Rhin. & Laryng. **56**: 328 (June) 1947; Further Observations of the Effects of Thyroid Insufficiency on the Nasal Mucosa, Laryngoscope, **60**: 627 (July) 1950.

## MEDICOLEGAL APPLICATION OF BLOOD GROUPING TESTS

In 1937 the Committee on Medicolegal Blood Grouping Tests of the American Medical Association prepared a report concerning the status at that time of the use of blood grouping in forensic medicine.[1] In the intervening 15 years there have been extensive advances in the blood grouping field, stimulated primarily by the discovery of the Rh factor shortly after the report was published. In addition, the attitude of courts toward the blood tests has changed in that they are now more receptive to such evidence. Therefore, under the auspices of the Committee on Medicolegal Problems a new report, prepared in order to bring the subject up-to-date, is presented in this issue of THE JOURNAL for the information of physicians and for the guidance of attorneys confronted with such problems.

The most important advance has to do with the developments in the Rh-Hr field. With the antiserums available at the present time the Rh-Hr system considerably increases the chances of solving problems of disputed parentage and has indeed been successfully applied when the A-B-O and M-N tests were inconclusive, not only for disputed paternity but also in interesting problems of interchange of babies in hospitals and in kidnaping cases. The Rh-Hr tests considerably increase the chances of individual identification of fresh wet blood stains, though for dry blood stains the examination is limited to the A-B-O system. As explained in the report, in addition, other blood factors have recently been discovered, which, though not yet sufficiently reliable for practical application, offer promise for the future. Readers desiring a detailed authoritative account of these recent developments are advised to study this report, which has been prepared by several of the leading investigators in the field and which was also submitted to a large body of qualified consultants before publication.

## MEASUREMENT OF EXTRACELLULAR FLUID

Measurement of the volume of the extracellular fluid could be of importance clinically if the methods presently used were simple and accurate enough. The standard method of determining the extracellular fluid is based on measuring the inulin space as suggested by Gaudino and associates.[1] Since inulin is rapidly excreted in the urine, a large priming dose of the material must be given. An intravenous infusion of inulin is then administered at a constant rate for about six hours. This length of time is necessary to insure a uniform distribution of the inulin in the extracellular fluid. Recently Deane and co-workers [2] confirmed the observations of others that intravenously administered sucrose is not metabolized in man (though it is in the dog) and found that the volume of distribution of sucrose is the same as that of inulin. But since sucrose has a much smaller molecular weight than inulin (342 for the former and 5,200 for the latter) its velocity of distribution is much greater. Within 180 minutes after the initiation of the sucrose infusion (in adult or young patients) the distribution of sucrose is such that a determination of the extracellular fluid can be made and no priming dose is required; however, in the present form this procedure is not applicable to patients with edema unless the infusion is prolonged.

Walser [3] recently reported the distribution of sulfate labeled with radioactive sulfur in normal subjects. In 15 to 20 minutes after the injection, the radioactive sulfate had distributed itself over a volume numerically equal to the extracellular space. After 20 minutes there was further distribution, which was interpreted as indicating that the material diffuses into other compartments. Within the first 20 minutes it was found that 10 normal subjects gave an average sulfate space equivalent to 16% of the body weight, which is similar to the value obtained by other workers for the extracellular fluid volume determined with inulin. As they are studied further these new tools may provide a more reliable device for either creating a better understanding of the physiological basis of disease or facilitating the diagnosis or treatment of abnormal states of hydration.

## POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

The semiannual listing of postgraduate continuation courses prepared by the Council on Medical Education and Hospitals appears elsewhere in this issue (page 681). Opportunities for this type of postgraduate education are presented for the six month period beginning July 1. The courses listed total 873 and vary in length from a few days to several months. Many are given on a full-time basis while others are part-time. There are study opportunities for both the physician in general practice and the specialist. Courses are being given in 32 states and the District of Columbia. The subjects include 47 major areas in the field of clinical medicine and the basic sciences. A series of courses for military personnel at medical installations is also included.

Medical schools, state medical societies, hospitals, state and city boards of health, graduate schools of medicine, special medical societies, and state chapters of the American Academy of General Practice continue to be active in presenting this type of postgraduate education.

The Council endeavors to make this listing as complete as possible. Institutions and organizations with courses that are not included in the current list are invited to furnish the Council with details pertaining to the opportunities that they have developed for postgraduate continuation study by physicians.

1. Report of the Committee on Medicolegal Blood Grouping Tests, J. A. M. A. **108**: 2138-2142 (June 19) 1937.

1. Gaudino, M.; Schwartz, I. L., and Levitt, M. F.: Inulin Volume of Distribution as Measure of Extracellular Fluid in Dog and Man, Proc. Soc. Exper. Biol. & Med. **68**: 507, 1948.

2. Deane, N.; Schreiner, G. E., and Robertson, J. S.: Velocity of Distribution of Sucrose Between Plasma and Interstitial Fluid, with Reference to Use of Sucrose for Measurement of Extracellular Fluid in Man, J. Clin. Investigation **30**: 1463, 1951.

3. Walser, M.: Volume of Distribution of Radiosulfate as Measure of Extracellular Fluid, Proc. Soc. Exper. Biol. & Med. **79**: 372, 1952.

V 14
1952

# ORGANIZATION SECTION

## FEDERAL MEDICAL LEGISLATION

### Longshoremen's and Harbor Workers' Compensation Act Amendment

H. R. 7811, a bill to amend the Longshoremen's and Harbor Workers' Compensation Act to increase the maximum benefits provided by such act and to extend its provisions to Puerto Rico, was introduced by Representative Thompson of Texas. This bill is identical with H. R. 7517, which has been previously reported in THE JOURNAL.

### Withholding Hospitalization Premiums from Federal Workers

Representative Miller of California introduced H. R. 7844. This bill would authorize, under regulations of the Civil Service Commission, the withholding, on request, from compensation of federal employees, amounts for the payment of certain life and hospitalization insurance. Under the present law, the withholding of such deductions is not authorized. Currently federal employees covered by voluntary group hospitalization policies must designate one or more of their number to make collection.

### Alcoholics and Narcotics Addicts

H. R. 7619 was introduced by Representative Ramsay of West Virginia and proposes to promote the general welfare by organizing a Bureau of Clinics for treatment of chronic alcoholics and narcotics addicts. The bureau would be an independent office in charge of a director to be named by the President and confirmed by the Senate. The director would be required to have at least 20 years of experience in the cure and rehabilitation of chronic alcoholics and drug addicts and be trained in the medical sciences. The bureau would establish, maintain, and operate a system of farms for treatment and rehabilitation of chronic alcoholics and drug addicts. Medical personnel would be permanently transferred from the Public Health Service to the bureau. Other functions would include assisting the states and private agencies to establish similar farms, to train and educate personnel in approved methods of treatment, cure, and rehabilitation of alcoholics and drug addicts, and to utilize the facilities of the U. S. Employment Service in finding suitable employment for those rehabilitated.

## STATE MEDICAL LEGISLATION

### Louisiana

**Bills Introduced.**—H. 9 and H. 10 propose the creation of a **Louisiana board of institutions** to have general control, management, supervision, and direction of certain specified state hospitals and training schools. The board would be authorized to make necessary studies and investigations and to adopt such rules and regulations for the conduct of the institutions as it may deem advisable. H. 54, proposes the **creation of a charity hospital** in the city of Lake Charles for the purpose of furnishing medical and surgical treatment to indigent and destitute sick and wounded persons, without distinction of race and color. H. 111, to amend the Workmen's Compensation Act, proposes to require the employer to furnish to the employee a copy of the **report of any examination made by the employer's physician.** Failure to furnish the employee with such report would bar its use in evidence at a later hearing. H. 112 and H. 156 to amend the Workmen's Compensation Act, propose to require the **employer to furnish reasonable medical, surgical, and hospital services and medicines** not to exceed $1,000 in value, unless the employee refuses to allow them to be furnished by the employer. H. 155, to amend the Workmen's Compensation Act, proposes to require the **employer to furnish reasonable medical, surgical, and hospital services** and medicines for a period of six months following an injury, unless the employee refuses to allow them to be furnished by the employer. H. 239, to amend the Workmen's Compensation Act, proposes that the employer shall furnish **reasonable medical, surgical, and hospital services** and medicines not to exceed $2,000 in value unless the employee refuses to allow them to be furnished. H. 280, proposes the creation of a **Louisiana board of chiropractic examiners** and defines chiropractic as the employment of objective or subjective means to ascertain the alinement of the vertebrae of the human spine, including the use of analytical instruments, and/or x-ray for the purpose of analysis, and the practice of adjusting the vertebrae for the purpose of correcting interference, transmission, and expression, and charge, therefor, directly or indirectly; said practice being without the use of drugs or medicines, surgery, x-ray therapy, or radium therapy. H. 309, proposes to prohibit the sale of **barbiturates** or other hypnotic or somnifacient drugs and **central nervous system stimulants** such as amphetamine and desoxyephedrine, except on the prescription of a person licensed to practice medicine, dentistry, or veterinary medicine. H. 428, proposes certain amendments to the law **relating to coroners,** by, among other things, providing that no body shall be cremated except upon the permit or approval of the coroner. H. 429, to amend the law relating to the office of coroner, proposes among other things, that by mutual agreement between two-thirds of the coroners of the parishes included in any Congressional district of the state approved by the police jury of the parish in which the coroner has agreed, there shall be **established a forensic laboratory** for the mutual use of such coroners and this laboratory and its facilities shall be at the disposal of the respective coroners and law enforcement officers. The bill also proposes that following an autopsy the coroner may retain any specimens or organs of the deceased which in his discretion are desirable or needful for anatomic, bacteriologic, chemical, or toxicological examination as well as for possible evidence before a grand jury or a court. H. 438, proposes the creation of a **Louisiana board of dispensing opticians** for the regulation of the practice of dispensing opticianary, which is defined to be the art and science of optics as applied to the compounding, filling, and adapting of ophthalmic prescriptions, products, and accessories. Dispensing opticians would be prohibited from engaging in the diagnosis of diseases of the human eye or attempting to determine the refractive powers or visual skills of the human eye or in any manner attempting to prescribe for or treat diseases of the eye or to engage in the practice of optometry. H. 446, proposes to authorize certain school boards to make contracts for **group medical, surgical, and hospital benefits and services** with any insurance company, any hospital service and physicians service authorized to do business in the state providing for the rendering of such services and benefits to its employees. S. 162, proposes the creation of a **Louisiana board of chiropractic examiners** and defines chiropractic as the employment of objective or subjective means to ascertain the alinement of the vertebrae of the human spine, including the use of analytical instruments and/or x-ray for the purpose of analysis, and the practice of adjusting the vertebrae for the purpose of correcting interference with nerve transmission and expression, and charged therefor; said practice being without the use of drugs or medicine, surgery, x-ray therapy, or radium therapy.

### Mississippi

**Bill Enacted.**—H. 979, was approved April 12, 1952. It provides an appropriation to defray the expenses of the state board of health in **inspecting private hospitals** in the state which receive monies from the state for charity patients with a view to approving or disapproving such hospital for the reception and treatment of such patients.

### New Jersey

**Bills Enacted.**—A. 551, has become Ch. 285 of the Laws of 1952. It exempts from the **narcotic drug act** certain medicinal preparations which contain narcotic drugs but which also contain some other drug or drugs conferring upon the preparation medicinal qualities other than those possessed by the narcotic drug alone. A. 552, has become Ch. 209 of the Laws of 1952. It prohibits the sale of **hypodermic syringes or needles** or any instrument adapted to the use of administering cocaine or narcotic drugs by subcutaneous injections, except by physicians, dentists, veterinarians, nurses, pharmacists, dealers in surgical instruments, or attendants or interns in hospitals, sanitariums, or institutions. A. 611, has become Ch. 211 of the Laws of 1952. It amends the licensing law applicable to private nursing homes and private hospitals by extending the coverage thereof to convalescent homes.

### Rhode Island

**Bill Enacted.**—H. 955, was approved April 24, 1952. It provides that any person who unlawfully **sells or offers to obtain for any other a diploma** or certificate of learning from any college, university, or institution of learning in any country to which that other is not entitled shall be guilty of a felony and upon conviction shall be sentenced for not more than two years in jail or fined not more than $5,000.

---

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

# MEDICAL NEWS

## CALIFORNIA

**Two Deaths from Botulism.**—Botulism has caused two deaths in Walnut Park in Los Angeles County. A third victim is expected to recover. Home-canned mushrooms were the suspected food, and laboratory analysis confirmed the presence of type B botulinus toxin. The fact that the mushrooms were purchased at a market that had imported them from the midwest may account for the finding of type B, rather than type A, which is more usual in California.

**University News.**—Dr. Douglas M. Kelley, professor of criminology, University of California, Berkeley, has been elected chairman of the section on legal aspects of psychiatry of the American Psychiatric Association. Dr. Kelley served as psychiatrist at the Nuremberg trials for war criminals in Germany and is author of "22 Cells in Nuremberg."——Dr. Gordon E. Goodhart, director of the medical extension of the University of Southern California School of Medicine, was recently appointed associate dean of the medical school.

**Intestinal Illness Among Skiers at Donner.**—In May the State Department of Public Health reported that an investigation was under way into the cause of gastrointestinal illnesses occurring among visitors to ski resorts at Donner Summit. The illness is characterized by fever, abdominal pain, nausea, vomiting, and diarrhea, and lasts from 24 to 48 hours. Attempts are being made to encourage resort owners in this and other areas to cooperate with local health authorities in planning for safe water supplies and adequate sewage disposal.

**State Rabies Advisory Council.**—Eleven organizations met recently with the state department of public health to form a state-wide Rabies Advisory Council, which will help develop and propose state legislation for control of rabies. The present concepts in regard to control of rabies have been approved by the California Medical Association, California State Veterinary Medical Association, and the California Conference of Local Health Officers. A final draft of the proposals will probably be submitted to the 1953 state legislature.

**Traveling Atomic Energy Exhibit.**—An elaborate display on radioiodine in medicine is part of a "traveling show" that will arrive at the University of California at Los Angeles June 21 and remain on daily public exhibit (noon to 9 p. m.) in the Engineering Building through June 28. This traveling atomic energy exhibit was assembled by the Atomic Energy Committee at Oak Ridge, Tenn., and launched on a national tour in cooperation with the National University Extension Association. The exhibit will furnish a summary of uses of radioiodine in diagnosis and therapy. There is no charge for attendance.

**Poison in Household Products.**—The state health department and the state board of pharmacy have taken steps to prevent the illegal sale of liquid silverware polishes containing sodium cyanide, following the near-death of a Menlo Park child who used a toothbrush that had been dipped in a household polishing solution. According to Dr. Wilton L. Halverson, state director of public health, no polish or similar product containing poison can be sold in California except by licensed pharmacists; however, a few grocers and other merchants have apparently stocked such preparations through ignorance of the state law. Dr. Halverson points out that even drugstore sales are illegal unless labels carry the standard red and white poison warning and list the ingredients.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

## CONNECTICUT

**Senior Students Award Teaching Prize.**—The graduating seniors at the Yale University School of Medicine, New Haven, have reversed the usual procedure and awarded a prize to "the most outstanding teacher." He is Dr. Gerald Klatskin, associate professor of medicine, who received the first Francis Gilman Blake Award of the Yale chapter of Nu Sigma Nu. The award, established "to encourage better teaching of the medical sciences by recalling the example set by Dr. Blake," former dean of the Yale School of Medicine, who died Feb. 1, will be given annually after a vote of the graduating class.

## DISTRICT OF COLUMBIA

**Society News.**—The Association for the Advancement of Exceptional Children of the Metropolitan Area of Washington, D. C., Inc., has changed its name to Help for Retarded Children, Inc.

**Personals.**—Dr. Arthur A. Morris, Washington, D. C., lectured on "The Follow-ups of Psychomotor Epilepsy" before the International College of Surgeons in Madrid, Spain, May 22.——The National Cancer Institute announces the appointment of C. Donald Larsen, Ph.D., as executive secretary of the NCI Cancer Control Committee. He will review applications for special cancer control projects.

**Old Timers Meeting.**—At its annual "Old Timers Meeting" in Washington, D. C., the Georgetown Clinical Society conferred on Dr. J. Bay Jacobs (class of 1921) the Award of Honor for the year 1952. Dr. Jacobs was formerly associate professor of obstetrics at Georgetown University School of Medicine. The award, conferred annually on the outstanding graduate member, was given for "his years of service as a professor and his ability as an obstetrician."

**Radioisotope Laboratory.**—The George Washington University Hospital has opened a radioisotope laboratory for research and therapy in cancer and related diseases and for determination of thyroid function in patients with nonmalignant conditions. The laboratory, which has been approved by the Atomic Energy Commission for work with radioactive iodine, phosphorus and gold, is under the direction of Dr. Louis K. Alpert, adjunct clinical professor of medicine.

**Appeal for Blood Vessels for Grafts.**—An appeal for blood vessels, to be used in persons in the Washington, D. C., community, was issued June 1 by the George Washington University Blood Vessel Bank. Dr. Brian B. Blades, professor of surgery at the George Washington University School of Medicine, announced that physicians will be on call day and night to respond to any donation of blood vessels from recently deceased persons offered by the families. Blood vessels must be secured from persons under 50 years of age within a few hours after death. The deceased persons must not have died of leukemia or as the result of an infectious disease or condition. Calls to tell of the availability of donors may be made to the George Washington University Hospital, STerling 7800, at any hour, day or night. A physician will be dispatched and should arrive within an hour at any spot within the metropolitan area.

## GEORGIA

**Narcotic Violation.**—Dr. Thomas B. Brantley of Hiltonia pleaded guilty to a violation of the federal narcotic laws in the United States District Court at Savannah on May 1. He was sentenced to two years and fined $250. The sentence was suspended, and he was placed on probation for two years.

V 14
1952

## ILLINOIS

**Report on Syphilis.**—Freshly acquired syphilis reported to the state department of public health during the first four months of 1952 for Illinois, exclusive of Chicago, added up to the remarkably low total of 82 cases, an average of less than 2 cases per 100,000 population. Although 1,012 cases of syphilis were reported from the downstate area during the period, all but 82 were relatively long standing cases in which diagnosis was only recently made.

### Chicago

**Students' Awards to Teachers.**—Gold keys, the annual Raymond B. Allen instructorship awards, were recently presented by the students to five faculty members at the University of Illinois College of Medicine. The awards, designed to honor excellency in individual clinical/didactic instructorship rendered by the faculty members to students, were made to Drs. Percival Bailey, professor of neurology; Murray Franklin, assistant professor of internal medicine; Cornelius W. Vermeulen, associate professor of surgery; William V. Whitehorn, associate professor of physiology, and Arnold A. Zimmermann, D. ès S., professor of anatomy.

## KANSAS

**Personals.**—Dr. Vernon M. Winkle, Kansas City, city-county health director, has resigned to become director of local services for the Kansas State Board of Health. He will be succeeded by Dr. Henry Wallace Lane of El Dorado, who will assume his duties on July 1. Dr. Lane, who formerly lived in Kansas City, is El Dorado city and Butler-Greenwood county public health director.——Dr. Ralph H. Major, Kansas City, recently received an honorary doctor of letters degree from the University of Cincinnati College of Medicine.

## LOUISIANA

**Society News.**—At the annual meeting of the New Orleans Graduate Medical Assembly, March 10-13, Dr. Charles B. Odom was elected president; Dr. Andrew V. Friedrichs, president-elect; Dr. Woodard D. Beacham, secretary, and Dr. Robert F. Sharp, treasurer. The sixteenth annual meeting of the assembly will be held March 2-5, 1953, at the Municipal Auditorium, New Orleans.

**Cancer Meeting.**—A joint meeting of the Louisiana Academy of General Practice, the state university school of medicine, and the state division of the American Cancer Society will be held June 19 at the Hotel Bentley, Alexandria. Dr. Edwin A. Lawrence, professor of surgery, University of Indiana School of Medicine, Indianapolis, the visiting speaker, will discuss "Problems in Gastrointestinal Cancer." A panel on problems in the diagnosis and treatment of cancer will be conducted by members of the faculty from Louisiana State University, New Orleans.

## MAINE

**State Medical Meeting in Rockland.**—The annual session of the Maine Medical Association will be held at The Samoset in Rockland, June 22-24, under the presidency of Dr. C. Harold Jameson of Rockland. Dr. Louis H. Bauer of Hempstead, N. Y., President of the American Medical Association, will deliver an address at the dinner on Monday at 7 p. m. Other out-of-state speakers include:

Harry S. N. Greene, New Haven, Conn., Significance of the Heterotransplantability of Human Cancer Cells.
John W. Strieder, Boston, Surgical Treatment of Pulmonary Infections.
William Stone Jr., Boston, Retention of the Incompletely Covered Foreign Body in Tissues with Special Application to the Eye.
George Van S. Smith, Boston, Treatment of Preeclampsia and Eclampsia with Penicillin.
Sydney S. Gellis, Boston, Causes of Death in the Newborn and What Can Be Done to Prevent Them.
Robert R. Linton, Boston, Treatment of Peripheral Arterial Diseases.
William B. Terhune, New Canaan, Conn., Making the Most of Man.
Harold G. Scheie, Philadelphia, Arteriosclerotic and Hypertensive Vascular Changes in the Fundus.

The second annual Art-Hobby Exhibit will be held during the annual session. The Woman's Auxiliary will hold its annual meeting in conjunction with that of the state association.

## MASSACHUSETTS

**Society News.**—At the annual meeting of the Massachusetts Society of Examining Physicians held at the Harvard Club in Boston, May 7, Dr. John Leo Doherty, Boston, was elected president; Dr. Charles H. Bradford, Boston, president-elect; Dr. Carl Bearse, Boston, vice-president; Dr. Robert C. Gwin, Brookline, treasurer; and Dr. J. Robertson Knowles, Boston, secretary.

**Self-Help by Former Tuberculous Patients.**—Opportunity Index, said to be the first state-wide placement agency of its kind in the United States, is an organization of and for tuberculosis patients and former patients who have gone through the rehabilitation phase of treatment. It was established Feb. 29 at the Rutland State Sanatorium "to aid the ex-tuberculous in an active program with the eventual goal of suitable employment." The immediate goal is the compilation of a state-wide list of employers willing to hire the more than 3,000 persons who are annually discharged from federal, state, county, and municipal tuberculosis hospitals in Massachusetts.

Regular membership consists of all persons with active or nonactive tuberculosis; associate membership, which will include all nontuberculous persons interested in advancing this project, is open also to former patients who for any reason prefer not to be listed in the first category. Dues are voluntary, ranging from a minimum of 25 cents to a maximum of $5 a year. Mr. David A. Bowers, rehabilitation director, Massachusetts Tuberculosis and Health League, is president of the organization. Information may be obtained by writing to Opportunity Index, Rutland.

## MICHIGAN

**Students Honor Dr. Crosby.**—Elizabeth C. Crosby, Ph.D., professor of anatomy, University of Michigan School of Medicine, Ann Arbor, was recently honored by the university chapter of the Student American Medical Association for her 32 years of service to students of the university. Frank Shubeck, president of the chapter, presented her with a clock inscribed "for distinguished achievement in the field of medical education." Dr. Crosby is the first recipient of this award, which is to be made annually to the person who, in the chapter's estimation, has contributed most to medical education.

## MINNESOTA

**Outbreaks of Hepatitis.**—Cases of infectious hepatitis are occurring in several sections of Minnesota. The disease appears to be widespread, particularly in the west and central parts of the state, according to Dr. C. B. Nelson, director of the division of epidemiology, Minnesota Department of Health. Physicians are requested to report all cases promptly.

## MISSOURI

**European Tour.**—The General Practitioner's Club of Greater St. Louis is sponsoring a 54 day European tour, July 11. Any physician wishing to join the group may contact Dr. John O'Connell, 10300 Lackland Rd., Overland, for details.

**Personals.**—At the annual meeting of the Missouri Social Hygiene Association in St. Louis on April 18, Dr. Paul J. Zentay, St. Louis, president of the association, received an honorary life membership in the association, "in grateful recognition of his valued leadership and many contributions to social hygiene."——Dr. Roland M. Klemme, professor of surgery, St. Louis University School of Medicine, recently addressed the International College of Surgeons at Bordeaux, France, and at Madrid and Barcelona, Spain. He spoke on "Surgical Treatment of Parkinsonism" in Bordeaux and presented a color movie on "Major Neuralgias" in Madrid. His plans include lectures at the Torina Medical School in Italy, and at the University of Istanbul, Turkey, and presentations before the Surgical Congress in Vienna and Amsterdam on "Malignant Tumors of the Brain."——Dr. R. Dean Woolsey, instructor in surgery, St. Louis University School of Medicine, recently addressed the meeting of the International College of Surgeons in Madrid, Spain, on intervertebral disks.

## NEBRASKA

**One Case of Smallpox.**—According to the U. S. Public Health Service, one confirmed case of smallpox was reported from Lancaster County during the week ending May 17.

**Crippled Children's Clinics.**—Clinics will be held at the high school in Lexington June 21 by Drs. William W. Bartels, Lincoln (or C. Fred Ferciot, Lincoln) and Michael Crofoot, Omaha. On June 28 Drs. William W. Bartels (or C. Fred Ferciot) and John L. Gedgoud, Omaha, will conduct clinics in the Knights of Columbus Building, North Platte.

## NEW MEXICO

**State Medical Election.**—At the annual meeting of the New Mexico Medical Society May 8-10 in Carlsbad, Dr. Coy S. Stone of Hobbs was elected president; Dr. Albert S. Lathrop, Santa Fe, president-elect, and Dr. Theodor E. Kircher, Albuquerque, secretary-treasurer.

## NEW YORK

**University News.**—Dr. Walter S. Wiggins, assistant professor of medicine, State University of New York College of Medicine at Syracuse, has been appointed assistant dean for graduate and postgraduate education. He assumed his new duties June 1, continuing his teaching in the department of medicine.

**Dr. Clausen Receives Medal.**—Dr. Samuel W. Clausen, professor of pediatrics, University of Rochester School of Medicine and Dentistry, was recently awarded the Albert David Kaiser Medal of the Rochester Academy of Medicine for his achievements as a "scholar, clinician and extraordinary teacher of pediatrics." Dr. Clausen has been chief pediatrician at Strong Memorial Hospital since 1924, as well as professor and member of the advisory board of the University of Rochester School of Medicine.

**Restoration of Early American Office.**—The Medical Society of the State of New York has approved a project for restoration of the historical early American physician's office at the Farmers' Museum in Cooperstown. Members of the society have been requested to contribute proper materials to restore the village doctor's office to its pre-Civil War condition. The office is located on a typical street of the 1840 period with a general store, school house, drug store, blacksmith's shop, and lawyer's office nearby. The physician's office was originally built in 1829 at Westford by Dr. John Drake. Among the materials needed to refurnish the office in its original state are a desk, chair, and examining couch used by a doctor in the state before 1840; anatomical and skeletal charts for the walls; early medical instruments; early crutches or other devices; old medical books; and a doctor's bag.

### New York City

**Hospital News.**—Dr. Henry N. Pratt, director of New York Hospital, has been elected president of the Greater New York Hospital Association. Dr. Ambrose P. Merrill was chosen president-elect, Dr. Martin R. Steinberg, vice-president, Mr. Louis Miller, treasurer, and Mr. Fred K. Fish, secretary.

**Radio Programs.**—The New York Academy of Medicine announces the following lectures for its postgraduate radio program, which is heard on Thursday from 9 to 10 p. m. over station WNYC-FM. On June 19, Dr. Mortimer D. Speiser will speak on "Syphilis and Pregnancy," and on June 26, Dr. Ralph Colp will speak on "Advances in the Surgical Management of Peptic Ulcer."

**Traffic Accidents Reduced.**—The number of accidents in the Third Avenue Transit System has been reduced from 10,178 in 1946 to 5,669 in 1951. The Surface Transportation Company, a division of the Third Avenue Transit System, won the American Transit Association's top award for safety in the United States and Canada for 1951.

Vehicle collisions, the largest single type of operator-controlled accidents, were reduced from 5,270 to 2,867. Routinely the operator of a vehicle involved in a major accident or in repeated minor accidents is referred to the medical department where a staff physician studies his history, social life, home environment, illnesses, and domestic problems to determine any reasons for anxiety. The clinic is available to the patients' own private physicians for consultation service and laboratory work, and information is submitted directly to them. Dr. Frank Brandaleone is medical director of the Third Avenue Transit System.

## PENNSYLVANIA

**Personal.**—Dr. Robert L. Schaeffer, first vice-president of the Medical Society of the State of Pennsylvania and chief-of-staff at the Allentown Hospital, has been appointed a trustee and councilor for the second district by the Board of Trustees of the society. He will fill out the term of the late Dr. John J. Sweeney, Upper Darby. The second councilor district includes Berks, Bucks, Chester, Delaware, Lehigh, and Montgomery counties.

**State Funds for Cancer Research Laboratory.**—The state legislature has appropriated $350,000 to maintain and operate the Institute for Cancer Research, 7701 Burholme Ave., Fox Chase, Philadelphia, during 1951-1953. Expenditure of the money is controlled by the state department of health. The Institute for Cancer Research combines its work with that of the Lankenau Hospital Research Institute, a unit of Philadelphia's Lankenau Hospital. Dr. Stanley P. Reimann is director and scientific director of both organizations. The staff of scientists, technicians and others is engaged in fundamental cancer research. The institute's animal colony totals 12,000, and some of the strains of mice go back 30 to 50 generations. Dr. Reimann said that Pennsylvania was one of a few states to support such a program.

### Philadelphia

**Dr. Ravdin Honored.**—A silver tray, bearing the engraved names of 65 doctors and 120 nurses of the University of Pennsylvania's 20th General Hospital unit who went to the China-Burma-India theatre in World War II under the leadership of Dr. I. S. Ravdin 10 years ago, was presented to Dr. Ravdin by members of the unit on May 15.

**University News.**—George B. Koelle, Ph.D., associate professor of pharmacology at Columbia University College of Physicians and Surgeons, New York, has been appointed professor of pharmacology in the Graduate School of Medicine of the University of Pennsylvania, Philadelphia. Dr. Charles A. Uhle, who has taught at the Graduate School of Medicine, University of Pennsylvania, since 1941, has been promoted to professor of urology and named chairman of the department of urology to succeed Dr. Joseph C. Birdsall, who died June 30, 1951.——Dr. Katherine R. Boucot, supervisor of municipal x-ray surveys, Philadelphia department of public health, has been named professor of preventive medicine at Woman's Medical College of Pennsylvania. Dr. Boucot, a graduate of the college, has been on its teaching staff since 1945. Also effective July 1 are the appointments of Dr. Jean Crump, formerly professor of pediatrics in charge of allergies, who will become professor of pediatrics and chairman of the department; Dr. Nicholas B. Dreyer, formerly chairman of the department of pharmacology, University of Vermont College of Medicine, Burlington, who will become professor of pharmacology and toxicology; and Dr. Carmen C. Thomas, professor of dermatology and syphilology, who will serve also as director of the department of oncology.

## TENNESSEE

**Camp for Diabetic Children.**—The Tennessee Diabetes Association is sponsoring a coeducational camp for diabetic children, aged 7 to 14, for a two week period in August. Financial arrangements may be worked out with the association. For information write Dr. Albert S. Easley, 301 Medical Arts Bldg., Chattanooga.

**Personals.**—Dr. Jesse Byron Naive, Knoxville, was recently installed as president of the Knoxville Academy of Medicine.——Dr. Albert Moore Hand of Texarkana, Texas, will join the staff of the University of Tennessee College of Medicine, Memphis, July 1.——Charles H. Eades Jr., Ph.D., assistant professor of

V 14
1952

chemistry, University of Tennessee Medical Units, Memphis, was awarded $4,995 by the American Cancer Society to continue his research on the amino acid content of blood and urine in cancer patients.

## TEXAS

**Cancer Symposium.**—At the annual symposium on "Fundamental Cancer Research," sponsored by the University of Texas M. D. Anderson Hospital for Cancer Research, held in Houston, April 25-26, the annual Bertner Foundation Award was made posthumously to Dr. George Milton Smith. Dr. Smith, whose home was in New Haven, Conn., received the award in recognition of his achievements as an organizer and administrator of cancer research. The annual Bertner Lecture was given by Dr. Stanhope Bayne-Jones of New York Hospital-Cornell Medical Center on "Aspects of Cancer Research in the United States." The Jesse H. Jones Fellowships in Cancer Education, given in honor of Dr. Bertner, were awarded to Dr. Robert J. Peace for advanced study in pathology at the M. D. Anderson Hospital and to Dr. Franklin T. Brayer for study in experimental medicine at the Memorial Hospital for Cancer and Allied Diseases, New York.

**Rare Books Purchased.**—A collection of rare books, some 1,000 ancient volumes and manuscripts on arthritis, gout, and rheumatism, has been bought by the M. D. Anderson Foundation for the library of the Houston Academy of Medicine in the Texas Medical Center. The collection, assembled over the past 36 years by Dr. Reginald Burbank of New York, contains many editions not to be found in the British Museum, the Bibliothèque Nationale in Paris, or the Surgeon General's Library in Washington. The collection is largely from the 16th, 17th, and 18th centuries. The oldest item is a medical manuscript dating from 1450. The eight-volume work of Baillou, the man who introduced the term rheumatism, is a priceless edition. The merged Baylor and Academy libraries are being housed at the Baylor University College of Medicine until the Medical Library is built in the proposed Houston Academy of Medicine Building. The Burbank collection will then be given a separate room in the new building in the Texas Medical Center.

## WEST VIRGINIA

**Society Elections.**—At the annual meeting of the West Virginia Academy of Ophthalmology and Otolaryngology in White Sulphur Springs, May 12-13, Dr. Melvin W. McGehee of Huntington was elected president; Dr. James K. Stewart of Wheeling, president-elect; Dr. Benjamin W. Bird of Princeton, vice-president; and Dr. Frederick C. Reel of Charleston, secretary-treasurer. The next annual meeting, which will be held jointly with the Virginia Society of Ophthalmology and Otolaryngology, is scheduled for May 2-3, 1953, at the Homestead in Hot Springs, Va.

**State Meeting at White Sulphur Springs.**—The annual meeting of the West Virginia State Medical Association will be held at the Greenbrier in White Sulphur Springs, July 24-26 under the presidency of Dr. Sobisca S. Hall of Clarksburg. Dr. Louis H. Bauer of Hempstead, N. Y., President of the American Medical Association, will be the guest speaker on Friday evening. Other out-of-state speakers will include:

Earle M. Chapman, Boston, Aspects of Industrial Medicine as Applied to Internal Medicine.

Arno E. Town, Philadelphia, The Red Eye.

Alphonse McMahon, St. Louis, Medical Aspects of the Acute Abdomen.

Theodore R. Fetter, Philadelphia, Early Recognition of Prostatic Disease by the General Practitioner.

Frederick H. Falls, Chicago, The Diagnosis and Management of Ectopic Pregnancy.

T. Grier Miller, Philadelphia, Ulcerative Colitis.

Leonard T. Peterson, Washington, D. C., Orthopedic Treatment of Arthritis.

Benedict F. Massell, Boston, Treatment of Rheumatic Fever, Including Penicillin Prophylaxis.

John H. Skaviem, Cincinnati, Current Trends in Treatment of Pulmonary Tuberculosis.

Alexander Brunschwig, New York, Radical Surgery for Recurrent Cancer.

The woman's auxiliary will meet at the same time and place. Other meetings to be held during the association sessions include the first regional meeting of the West Virginia chapter of the American College of Physicians and the first organization meeting of the Alumni of West Virginia University School of Medicine, both to be held Friday afternoon. The annual banquet is scheduled for Saturday evening at 7. Applications for room reservations should be mailed directly to the Reservation Manager, The Greenbrier, White Sulphur Springs.

**Hospital Given to Laird Foundation.**—Laird Foundation, Inc., a nonprofit organization of Montgomery, has acquired by gift the Laird Memorial Hospital. The 130 bed hospital, an outgrowth of the old Coal Valley Hospital, founded by Dr. William R. Laird in 1919, was opened to the public in 1938. The foundation sponsors at the hospital the Mary Louise Herscher Diabetic Clinic, the Laird Memorial Cancer Clinic, and a program of graduate training in surgery for physicians. Dr. William R. Laird, Montgomery, in announcing the gift of the hospital to the foundation, said that many new activities will be undertaken and that a far reaching program of expansion is being planned, which will provide additional and improved medical and nursing services for West Virginia.

## GENERAL

**Historians Award Osler Medal.**—The American Association of the History of Medicine has awarded the William Osler medal for 1952 to Mr. Herbert S. Klickstein, a senior at the University of Pennsylvania School of Medicine, in recognition of his essay "A Short History of the Professorship of Chemistry of the University of Pennsylvania School of Medicine."

**Seminars in Pediatrics, Obstetrics, and Gynecology.**—The 1952 session of the Southern Pediatric Seminar, to be held in Saluda, N. C., July 14-26, will be followed by a week devoted to the study of obstetric and gynecologic problems (July 28-Aug. 2). The seminar, established and maintained for the benefit of the general practitioner, is fully accredited for postgraduate requirements in the Academy of General Practice. Information may be obtained from Dr. D. Lesesne Smith, Registrar, 187 Oakland Ave., Spartanburg, S. C.

**Fellowship for Research in Blood Diseases.**—The Hematology Research Foundation invites applications for the Ruth Berger Reader Fellowship for research in blood diseases in the academic year 1952-1953. The stipend for the fellowship is $1,500 a year with option to renew. The offer is made to workers of any race, creed, or color in the United States. Applications must be submitted no later than July 15 to Hematology Research Foundation, 64 W. Randolph St., Chicago 1. Nine copies of application are requested. The council will choose the applicants on the basis of merit and will also choose the institution in Chicago in which the work is to be done.

**Meeting of Medical Librarians.**—The Medical Library Association, Inc., will hold its annual meeting at the Lake Placid Club, Essex County, N. Y., June 24-27 under the presidency of Miss L. Margueriete Prime of Chicago. On Tuesday afternoon, Dr. Austin E. Smith, Editor of THE JOURNAL, will discuss "Common Publishing Problems." On Wednesday at 11:30 a. m. Lieut. Col. Frank B. Rogers, M.C., Director, Army Medical Library, will read a paper on "The National Medical Library." At the Trudeau (N. Y.) Sanatorium Session Thursday morning, Dr. Gordon M. Meade, medical director of the sanatorium, will preside at a symposium on tuberculosis, which will be followed by a tour of the sanatorium. On Friday at 2 p. m. Dr. Sanford V. Larkey, Baltimore, will explain the "Indexing Project at the Welch Medical Library."

**First Isaac Ray Award.**—Dr. Winfred Overholser, medical superintendent of Saint Elizabeths Hospital, Washington, D. C., is recipient of the first Isaac Ray Award of the American Psychiatric Association. The award, named in honor of Dr. Isaac Ray, the first American author in the field of legal problems connected with mental disorders, is to be given annually to some person of outstanding accomplishment in psychiatry and jurisprudence. The winner receives $1,000 and is appointed to deliver the Isaac Ray Lectures at some university that has both

medical and law schools. Dr. Overholser, who will deliver his lectures at Harvard University next year, is professor of psychiatry at George Washington University Medical School, Washington, D. C., and a past president of the American Psychiatric Association.

**Outbreaks of Communicable Diseases.**—The U. S. Public Health Service report on communicable diseases for the week ended May 17 includes the following data. For the first 20 weeks of 1952 a total of 563 cases of typhoid were reported as compared with 596 for the corresponding weeks of 1951. Pennsylvania reported the largest number since Jan. 1, namely, 53 cases. Other states reporting more than 25 cases were Texas, 43, Georgia, 40, California, 38, Mississippi, 33, Louisiana, 30, and Colorado, 28. Of 11 cases of Rocky Mountain spotted fever, 6 were in Wyoming, the only state in the mountain division to report any cases. The report from Idaho had not been received. The number of cases of poliomyelitis was 116 (exclusive of Pennsylvania, North Dakota, and Idaho, for which reports had not been received) as compared with 101 for the previous week.

**Social Science Research in Health.**—An inventory of social science research in health, listing over 300 projects in the United States, has just been completed by the Health Information Foundation of New York City. Adm. William H. P. Blandy, USN (retired), foundation president, said that the project was designed to give an over-all view of social, economic, and psychologic research in health. The material presented in the inventory was secured through 774 public and private organizations, including federal, state, and local agencies, national organizations, and colleges and universities. The material has been indexed by authors, by research organizations conducting the studies, and by the geographic areas of investigation, with abstracts of each project and cross references provided. The foundation says that this is believed to be the first comprehensive listing of social science research in health.

**Pediatric Research.**—The Playtex Park Research Institute, a nonprofit public service foundation, is devoted to the support of research in the field of child health. The total commitments to the institute, since its founding three years ago by the International Latex Corporation, have grown to more than one-half million dollars. Research supported in 14 states includes investigations in leukemia, blindness, cerebral palsy, prematurity, childbirth, allergy, stillbirths and neonatal deaths, anemia, psychiatry, and other fields of pediatric medicine.

Mr. Walter O. Heinze, president of the International Latex Corporation, Dover, Del., in commenting on the annual report, expressed the hope that the founding of Playtex Park Research Institute would "prove an inspiration to other members of industry to lend greater support to medical research, for the physical and economic well-being of this nation and the world."

**Atomic Energy Institute.**—The University of Michigan Law School, Ann Arbor, will hold its annual summer institute on "Atomic Energy, Industrial and Legal Problems" June 26-28 at the Law Quadrangle in cooperation with the Michigan Memorial-Phoenix Project. On Thursday, Paul C. Aebersold, Ph.D., director of the isotopes division of the Atomic Energy Commission, will talk on "Producing and Using Radioisotopes." On Friday afternoon provision will be made for visits to the Atomic Energy Laboratories and exhibits, and on Friday evening there will be a panel discussion on "Control of Private Development of Atomic Energy." Saturday morning will be devoted to consideration of "Radiation Hazards of Life and Property." Dr. John C. Bugher, deputy director of the division of biology and medicine of the Atomic Energy Commission, will speak on "Effects of Radiation," and Mr. Orris S. Hiestand Jr., assistant counsel at Oak Ridge Operations of the Atomic Energy Commission, on "Compensation for Injury to Life or Property."

**Standard Oil Residency Program.**—The medical department of the Standard Oil Company of New Jersey is sponsoring a residency training program in medicine in industry. The major objectives of this program are (1) to provide practical experience and training for qualified graduate physicians to fit them for the practice of medicine in connection with modern industry and (2) to help the candidate qualify for specialist certification or degree. Single graduates of an approved medical school who have already completed at least one, or preferably two, years of internship in an approved hospital, and who have an interest in industrial medical practice are eligible.

The duration of the residency is 18 months: 6 months in the medical department of the Standard Oil Company and its domestic affiliates, and 12 months in the medical department of the Lago Oil and Transport Company, Ltd., a Jersey affiliate operating in Aruba, Netherlands West Indies. The first physician to participate in this program, Dr. Thomas C. Fowlkes of Selma, Ala., was selected from a list of over 50 candidates.

**Alcoholism Mortality Declines.**—According to the Metropolitan Life Insurance Company, the mortality from alcoholism in the industrial population has declined by 85% over the past 40 years. Deaths from acute and chronic alcoholism averaged 6.3 per 100,000 of the company's industrial policyholders in the period 1911-1917, and 0.9 per 100,000 in 1950. The death rate in the insured group fell sharply in the years immediately preceding the prohibition amendment to the federal constitution, reached its lowest point of 0.7 per 100,000 in 1920, the first year the amendment was in effect, and then moved upward to a second, but lower, peak of 4.9 per 100,000 in 1926. From that point, through the years, a downward trend of the death rate has been maintained. The problem is now being attacked constructively, according to the statisticians, with state and municipal health departments as well as hospitals establishing facilities in increasing numbers for the study and treatment of alcoholism. The National Committee on Alcoholism has committees in many cities operating alcoholism information centers; the National Research Council is guiding research on the probable causes of alcohol addiction; and many welfare and religious agencies and business and industrial organizations are supporting and encouraging the development of programs for the scientific study and control of alcoholism. The statisticians say that "a great deal of additional intensive and coordinated effort is still needed to restore large numbers of men and women to useful lives, and to keep others from becoming excessive drinkers."

**Society Elections.**—At the annual meeting of the American Gynecological Society, held in Hot Springs, Va., May 12-14, Dr. William P. Healy, New York, was elected president; Dr. Robert A. Kimbrough Jr., Philadelphia, treasurer; and Dr. John I. Brewer, Chicago, secretary.——At the annual convention and scientific meeting of the Society of Biological Psychiatry held in Atlantic City, N. J., May 11, Dr. Abram E. Bennett, Berkeley, was elected president; Dr. Warren S. McCulloch, Chicago, first vice-president; Dr. Ladislas J. Meduna Chicago, second vice-president; and Dr. George N. Thompson, Los Angeles, secretary-treasurer.——At a recent meeting the Southwestern Pediatric Society elected Dr. Clement J. Molony, Beverly Hills, Calif., president; Dr. Harold V. Weatherman, San Diego, Calif., vice-president; and Dr. Carl A. Erickson, Pasadena, Calif., secretary.——At the annual meeting of the American Psychiatric Association in Atlantic City May 12-16 Dr. D. Ewen Cameron of Montreal, Canada, was installed as president; Dr. Kenneth E. Appel of Philadelphia was chosen president-elect; Dr. R. Finley Gayle Jr. of Richmond, Va., secretary; and Dr. Howard W. Potter of Brooklyn, treasurer.——At its annual meeting in Chicago on May 8, the American Board of Dermatology and Syphilology, Inc., elected Dr. Donald M. Pillsbury of Philadelphia, president and Dr. Nelson P. Anderson of Los Angeles, vice-president. Dr. George M. Lewis of New York was re-elected secretary-treasurer. The position of executive secretary was created, and Miss Janet Newkirk of New York, formerly assistant secretary, was appointed.

## DEATHS IN OTHER COUNTRIES

**Dr. Maria Montessori** died May 6 at the age of 81. Dr. Montessori was the first woman to receive the medical degree of the University of Rome. She was later appointed lecturer in pedagogic anthropology and established all-day schools for young children in the slum quarters of the city. Montessori societies, training colleges, and research institutes were established in many countries, and annual congresses were held. Her work as an educational reformer has had international influence.

V 14
1952

# MEETINGS

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, Seaview Country Club, Absecon, N. J., June 19-21. Dr. Norris J. Heckel, 122 South Michigan Ave., Chicago 3, Secretary.

AMERICAN HEARING SOCIETY, Chicago, June 28. Mrs. Francis E. Lee, 817 14th St. N.W., Washington 5, D. C., Secretary.

AMERICAN ORTHOPEDIC ASSOCIATION, London, England, June 30-July 4. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

AMERICAN UROLOGICAL ASSOCIATION, Chalfonte-Haddon Hall, Atlantic City, N. J., June 23-26. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

AMERICAN VETERINARY MEDICAL ASSOCIATION, Ambassador Hotel, Atlantic City, N. J., June 23-26. Dr. J. C. Hardenbergh, 600 South Michigan Ave., Chicago 5, Executive Secretary.

IDAHO STATE MEDICAL ASSOCIATION, Sun Valley, June 15-18. Dr. Robert S. McKeon, 305 Sun Bldg., Boise, Secretary.

MAINE MEDICAL ASSOCIATION, Samoset Hotel, Rockland, June 22-24. Mr. W. Mayo Payson, 142 High Street, Portland 3, Executive Secretary.

MEDICAL LIBRARY ASSOCIATION, Lake Placid Club, Lake Placid, N. Y., June 24-27. Miss Caroline Riechers, 1758 West Harrison St., Chicago 12, Secretary.

POST GRADUATE MEDICAL ASSEMBLY OF SOUTH TEXAS, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

ROCKY MOUNTAIN RADIOLOGICAL SOCIETY, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

UPPER PENINSULA MEDICAL SOCIETY, Country Club, Iron Mountain, Mich., June 27-28. Dr. E. Theodore Palm, 412 Superior Ave., Crystal Falls, Mich., Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

### INTERNATIONAL

AUSTRALASIAN MEDICAL CONGRESS, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE, Central Hall, London, England, July 8-13. Dr. J. H. Harley Williams, Tavistock House North, Tavistock Sq., London, W.C.1, England, Secretary General.

CONGRESS OF THE INTERNATIONAL DIABETES FEDERATION, Leyden, Netherlands, July 7-12. Dr. F. Gerritzen, 33, Prinsegracht, The Hague, Netherlands, Secretary.

EUROPEAN CONGRESS OF CARDIOLOGY, University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

EUROPEAN SOCIETY OF CARDIOVASCULAR SURGERY, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

INTERAMERICAN CARDIOLOGICAL CONGRESS, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

INTER-AMERICAN CONGRESS OF PUBLIC HEALTH, Havana, Cuba, Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6e, France, Secretary.

INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

INTERNATIONAL CONGRESS OF DIETETICS, Royal Tropical Institute, Amsterdam, The Netherlands, July 7-11. Miss Diane J. Ten Haaf, Educational Bureau of the Nutritional Council, 42 Koninginnegracht, The Hague, Netherlands, General Secretary.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

INTERNATIONAL CONGRESS OF HAEMATOLOGY, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Nice-Cannes, France, and Monaco, Sept. 8-18. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

INTERNATIONAL CONGRESS ON HYDATID DISEASE, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

INTERNATIONAL CONGRESS ON MEDICAL RECORDS, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

INTERNATIONAL CONGRESS ON NEUROPATHOLOGY, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

INTERNATIONAL CONGRESS OF PHYSIOPATHOLOGY OF ANIMAL REPRODUCTION AND ARTIFICIAL INSEMINATION, Copenhagen, Denmark, July 7-10. Prof. Ed. Sorensen, The Royal Veterinary and Agricultural College, Bülowsvej 13, Copenhagen V, Denmark.

INTERNATIONAL CONGRESS OF UROLOGY, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

INTERNATIONAL SOCIETY OF GEOGRAPHIC PATHOLOGY, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

INTERNATIONAL UNION AGAINST TUBERCULOSIS, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

NEURORADIOLOGIC SYMPOSIUM, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

WORLD MEDICAL ASSOCIATION, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General.

# EXAMINATIONS AND LICENSURE

### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II*, June 18-20; *Part I*, September. All centers where there are five or more candidates. Exec. Sec., Dr. John P. Hubbard, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral*. Swampscott, Mass., Sept. 28-Oct. 1. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written*. Various Centers, September 1953. Applications must be received prior to May 1. All candidates are now required to take the written examination. *Oral*. Philadelphia, October 1953. Ex. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written*. Various centers and overseas, Oct. 20. Closing date for the acceptance of applications for the written examination was May 1. *Oral*. San Francisco, September or October; New York City, November or December. Subspecialty: Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main Street, Madison 3.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written*. Various Centers, Feb. 6, 1953. Final date for filing applications is Nov. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written*. Various Centers, January 1953. Final date for filing applications is July 1. *Practical*. Chicago, Oct. 6-10 and New York City, June 6-10, 1953. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: The deadline for the receipt of applications for the 1953 Part II examinations is Aug. 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF PATHOLOGY: *Written and Oral*. Pathologic Anatomy and Clinical Pathology examination. Chicago, Oct. 9-11. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

AMERICAN BOARD OF PEDIATRICS: *Oral*. San Francisco, June 27-29; Chicago, Oct. 24-26; Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH: Cleveland, Oct. 18-20. Sec., Dr. E. L. Stebbins, 615 N. Wolfe St., Baltimore.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: Chicago, June 13-14. Final date for filing applications was March 15. New York City, Dec. 15-16. Final date for filing applications is Sept. 15. Sec.-Treas., Dr. David A. Boyd, Jr., 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: *Oral*. Dec. 1-7. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written*. Various Centers. October 1952. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 15th St., Philadelphia.

BOARD OF THORACIC SURGERY: *Written*. Various Centers, Sept. 5. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2.

# DEATHS

**Luedde, William Henry** ✠ St. Louis; born in Warsaw, Ill., Aug. 13, 1876; St. Louis College of Physicians and Surgeons, 1899; Washington University School of Medicine, St. Louis, 1900; Distinguished Service professor of ophthalmology and director emeritus of the department, St. Louis University School of Medicine; at one time on the faculty of Washington University School of Medicine; an Associate Fellow of the American Medical Association; member of the American Association for the Advancement of Science, Alpha Omega Alpha, American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, and the Association for Research in Ophthalmology; fellow of the American College of Surgeons; on June 19, 1933, awarded the Leslie Dana Gold Medal by the National Society for the Prevention of Blindness, of which he had been a member of the advisory committee since 1919, in cooperation with the Missouri Association for the Blind; director of the prevention of blindness department of the Missouri Commission for the Blind from 1913 to 1926; active in developing the movement for saving sight in the state; director of St. Louis Society for the Blind; specialist certified by the American Board of Ophthalmology; served during World War I; affiliated with Firmin Desloge Hospital, St. Mary's Hospital and Infirmary, Missouri Baptist Hospital, St. Louis City and St. John's hospitals all in St. Louis, U. S. Marine Hospital, Kirkwood, St. Louis County Hospital in Clayton, and Veterans Administration Hospital in Jefferson City; died in St. Mary's Hospital March 19, aged 75, of coronary disease.

**Hendrickson, Russell Robert** ✠ Crookston, Minn.; born in Iron River, Wis., Aug. 17, 1903; University of Minnesota Medical School, Minneapolis, 1928; member of the American College of Chest Physicians; at one time served as medical officer for the Minnesota State Reformatory Hospital in St. Cloud; formerly superintendent and medical director of Buena Vista Sanatorium at Wabasha, superintendent of Fair Oaks Lodge Sanatorium at Wadena and of Sand Beach Sanatorium at Lake Park; before his retirement was medical director and superintendent of Sunny Rest Sanatorium; during World War II was tuberculosis specialist for the U. S. Public Health Service in Alaska and served as chief of the tuberculosis service at the U. S. Marine Hospital in Staten Island, N. Y.; died recently, aged 48, of cerebral embolism.

**Howes, Seth Francis Harrison** ✠ Franklin, Mass.; born in Southboro, Mass., Oct. 13, 1891; Harvard Medical School, Boston, 1918; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association; formerly superintendent of the Arizona State Hospital in Phoenix and the State Hospital for Mental Diseases in Howard, R. I.; at one time assistant superintendent of the New Hampshire State Hospital at Concord; served during World War II; formerly affiliated with the U. S. Veterans Administration Regional Office in Boston and chief of the neuropsychiatric service at the Veterans Administration Hospital in Manchester, N. H.; died in Worcester (Mass.) City Hospital Feb. 1, aged 60.

**McCann, John Joseph** ✠ Ionia, Mich.; born in Westport, Ont., March 11, 1877; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; for many years secretary of the Ionia-Montcalm Counties Medical Society; city physician and city health officer; served during World War I; charter member and past president of the staff, Ionia County Memorial Hospital; member of the board of directors of the Ionia County chapter of the American Red Cross and director at the Ionia County National Bank; died in Miami, Fla., March 20, aged 74, of injuries received when struck by a bus as he was crossing the street.

**McCuen, Brooks Walton,** Syracuse, N. Y.; born in Chazy, N. Y., Oct. 17, 1887; Syracuse University College of Medicine, 1911; for many years associate professor of surgery at his alma mater; past president of the Onondaga County Medical Society, Syracuse Academy of Medicine, New York Central Lines Association of Surgeons, and the New York and New England Railway Association of Surgeons; specialist certified by the American Board of Surgery; served during World War I; affiliated with St. Joseph's Hospital, where he had been president of the staff; member of the board of directors of Onondaga Sanatorium; died recently, aged 64, of myocardial infarction.

**Blakely, Clifton Lenard,** Baker, Ore.; State University of Iowa College of Medicine, Iowa City, 1910; member of the American Medical Association; served during World War I; died in St. Elizabeth Hospital March 5, aged 66, of hemiplegia.

**Briody, James Francis,** Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1898; during World War I served on the Selective Service Board and during World War II was active in civilian defense; formerly city physician; affiliated with St. Joseph and Paterson General hospitals; died March 24, aged 75, of cerebral hemorrhage and tuberculosis of the lungs.

**Brown, C. Anna J.** ✠ Seneca Falls, N. Y.; Syracuse University College of Medicine, 1897; served as county coroner; founder of Seneca Falls Hospital; died in Clifton Springs (N. Y.) Sanitarium and Clinic March 31, aged 81, of carcinoma of the stomach.

**Bruman, Arthur Karr,** San Francisco; Cooper Medical College, San Francisco, 1908; died April 1, aged 72.

**Buckley, Edward Simpson Jr.,** Weston, Mass.; Columbia University College of Physicians and Surgeons, New York, 1947; served during World War II; formerly resident physician at the Peter Bent Brigham Hospital in Boston, where he died March 26, aged 27, of Hodgkin's disease.

**Condit, John Christy** ✠ Santa Rosa, Calif.; Cooper Medical College, San Francisco, 1904; an Associate Fellow of the American Medical Association; veteran of the Spanish-American War; died March 16, aged 79, of coronary thrombosis.

**Coombs, Miller Oliver** ✠ Joplin, Mo.; the Hahnemann Medical College and Hospital, Chicago, 1912; died in St. John's Hospital March 5, aged 65, of hypertension and angina pectoris.

**Corbett, Edward Lawrence,** New York; University and Bellevue Hospital Medical College, New York, 1904; also an attorney; served during World War I; died March 17, aged 74, of coronary disease.

**Cottingham, Miles Dixon,** Kohler, Wis.; Milwaukee Medical College, 1907; retired medical director and industrial surgeon at the Kohler Co.; affiliated with St. Nicholas Hospital and the Memorial Hospital in Sheboygan, Wis.; died March 12, aged 69, of cardiovascular renal disease.

**Cox, Roy Herndon,** Elgin, Ill.; Rush Medical College, Chicago, 1902; served during World War I; affiliated with Elgin State Hospital, where he died April 8, aged 74.

**Craig, Alexander Crawford,** Topeka, Kan.; Northwestern University Medical School, Chicago, 1907; member of the American Medical Association; fellow of the American College of Surgeons; on the attending staff, St. Francis Hospital; died Feb. 29, aged 70, of cerebral hemorrhage.

**Craven, Young Drayton,** Long Beach, Calif.; Kentucky School of Medicine, Louisville, 1896; member of the Missouri State Medical Association and the American Medical Association; died March 18, aged 82, of acute coronary thrombosis.

**Crowgey, William B.** ✠ Scott, Ark.; Medical College of Virginia, Richmond, 1911; past president of Lonoke County Medical Society; member of the staff of Pulaski County Hospital and the Dr. C. S. Pettus Hospital in Little Rock; died recently, aged 66, of coronary occlusion, following pneumonia.

✠ Indicates Fellow of the American Medical Association.

V 14
1952

**Crumrine, Clarence Acklin,** Washington, Pa.; Harvard Medical School, Boston, 1921; specialist certified by the American Board of Internal Medicine; served during World Wars I and II; affiliated with Washington Hospital, where he died March 3, aged 55, of coronary occlusion.

**Duncan, John Atkinson** ✠ Marysville, Calif.; Leland Stanford Junior University School of Medicine, San Francisco, 1918; affiliated with Yuba City (Calif.) Community Hospital and Rideout Memorial Hospital; died March 30, aged 64, of coronary heart disease.

**Everett, Aaron Green,** Friar Point, Miss.; Memphis (Tenn.) Medical College, 1900; for many years physician for Illinois Central Railroad; died in Clarksdale (Miss.) Hospital Feb. 5, aged 77, of injuries received in an automobile accident.

**Foster, Samuel Gates,** Oil City, Pa.; Eclectic Medical College of the City of New York, 1891; formerly member of the city council and mayor; at one time state assemblyman; in 1940-1941 served as Venango County coroner; held various posts as officer in the National Guard from 1899 to 1913, his last being a four year term as judge advocate; on the board of Franklin (Pa.) Hospital and Oil City Hospital, where he died March 9, aged 84, of carcinoma.

**Freedman, Samuel Max** ✠ Dallas, Texas; Jefferson Medical College of Philadelphia, 1901; fellow of the American College of Surgeons; affiliated with St. Paul's, Baylor, Methodist, and Parkland City hospitals; died Feb. 9, aged 73, of myocardial infarction, and hypertension.

**Freeman, Roy Esten** ✠ Boise, Idaho; Northwestern University Medical School, Chicago, 1935; member of the American Academy of Dermatology and Syphilology; died recently, aged 48, of coronary occlusion with myocardial infarction.

**Gingras, Albert Francis,** Medford, Mass.; Tufts College Medical School, Boston, 1933; member of the American Medical Association and the New England Obstetrical and Gynecological Society; formerly city physician; affiliated with Lawrence Memorial Hospital, where he died March 26, aged 43.

**Gordin, Stanton Edwin** ✠ Connersville, Ind.; Chicago Homeopathic Medical College, 1896; an Associate Fellow of the American Medical Association; past president of the Fayette-Franklin Counties Medical Society; died March 4, aged 81, of nephritis.

**Granger, Eugene Norton,** Pascoag, R. I.; Dartmouth Medical School, Hanover, N. H., 1900; member of the American Medical Association; elected to the state senate for three terms; health officer for the town of Burrillville for many years; died March 8, aged 77.

**Grosso, Patrick P.,** Brooklyn; Fordham University School of Medicine, New York, 1916; served during World War I; formerly associated with the U. S. Public Health Service Reserve; died March 27, aged 60, of carcinoma.

**Hawkinson, William O.,** Roanoke, Mo.; Missouri Medical College, St. Louis, 1884; member of the American Medical Association; died March 2, aged 88, of cardiovascular renal disease.

**Heilbrunn, Julius,** Jersey City, N. J.; Long Island College Hospital, Brooklyn, 1916; member of the American Medical Association; specialist certified by the American Board of Pediatrics; served during World War I; on the staffs of the Margaret Hague Maternity Hospital and Christ Hospital, where he died March 4, aged 60.

**Heller, Charles,** Chicago; Harvey Medical College, Chicago, 1897; died March 10, aged 79, of coronary occlusion.

**Hemminger, Charles J.** ✠ Somerset, Pa.; Eclectic Medical Institute, Cincinnati, 1897; served as a member of the state board of medical education and licensure; past president of the Somerset County Medical Society; at one time practiced in Rockwood, where he was on the school board and town council, and later deputy coroner of Somerset County; served on the school board of Somerset; affiliated with Somerset Community Hospital; died recently, aged 78, of carcinoma of the duodenum.

**Heyenga, P. Harren,** St. Louis; American Medical College, St. Louis, 1910; died March 15, aged 80, of cardiac decompensation.

**Hill, Howard Stephen,** Seattle; University of California Medical School, San Francisco, 1898; member of the American Medical Association; died March 25, aged 80.

**Hochlerner, Reuben,** New York; University of the City of New York Medical Department, New York, 1892; for many years medical examiner in the public schools; died March 28, aged 83, of cerebral hemorrhage.

**Horne, Frank Lisle,** Berkeley, Calif.; Cooper Medical College, San Francisco, 1910; died in St. Helena Sanitarium and Hospital in Sanitarium March 28, aged 72, of coronary occlusion.

**Hugo, John Adam,** Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1915; served overseas during World War I; formerly on the staff of the Nanticoke State Hospital; died March 3, aged 64, of hypertension and cerebral hemorrhage.

**Hustead, Frank Humbert,** Philadelphia; Jefferson Medical College of Philadelphia, 1911; member of the American Medical Association; veteran of the Spanish-American War; served during World War I; formerly on the staffs of the Jefferson, Jewish, and Chestnut Hill hospitals and the Germantown Hospital, where he died March 2, aged 71, of heart disease.

**Hutchins, Lewis Reid,** Seattle; University of Oregon Medical School, Portland, 1935; member of the American Medical Association; fellow of the American College of Surgeons; clinical associate in surgery at the University of Washington Schools of Dentistry and Medicine; on the staffs of the King County, Doctors, Swedish, Children's Orthopedic, and Maynard hospitals; died March 17, aged 46, of coronary thrombosis.

**Izard, Samuel Edward,** Newhebron, Miss.; University of Nashville (Tenn.) Medical Department, 1900; past president of the Tri-County Medical Society; served on the city and county school board; died Feb. 4, aged 81, of coronary thrombosis.

**Jarrett, Elizabeth,** New York; New York Medical College and Hospital for Women, Homeopathic, New York, 1893; served as professor of gynecology at her alma mater; examining physician in public schools; died March 26, aged 87, of arteriosclerosis.

**Kasten, Leona Jane** ✠ San Antonio, Texas; University of Texas School of Medicine, Galveston, 1923; died Feb. 18, aged 59.

**Kayton, Howard B.,** Bellerose, N. Y.; Julius-Maximilians-Universität Medizinische Fakultät Würzburg, Bavaria, Germany, 1916; member of the American Medical Association; died in Maimonides Hospital in Brooklyn March 26, aged 61.

**Kearby, Howard Denton** ✠ St. Joseph, Mo.; St. Louis University School of Medicine, 1918; died in Missouri Methodist Hospital March 13, aged 64, of myocardial infarction.

**Launder, Frank T.,** San Diego, Calif.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1901; member of the American Medical Association and the Iowa State Medical Society; for many years practiced in Garwin, Iowa, and was a member of the Iowa State Board of Health; past president and for many years a member of the Iowa State Board of Medical Examiners; formerly on the staff of the Deaconess Hospital in Marshall City, Iowa; died March 11, aged 83, of heart disease.

**Lillie, Park A.,** Cloverdale, Ind.; Rush Medical College, Chicago, 1891; died March 8, aged 84, of arteriosclerotic heart disease.

**Long, Frank H.,** Coopersburg, Pa.; Eclectic Medical Institute, Cincinnati, 1909; died March 7, aged 65.

**Longstreet, Chalmer Joseph,** Binghamton, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1901; member of the American Medical Association; past president of the New York State Sanitary Officers' Association; for many years health officer of Binghamton; on the staff of the City Hospital, where he died March 6, aged 77, of spontaneous pneumothorax and arteriosclerotic heart disease.

**McClain, Rodney Paul** ✠ Seattle; Keokuk Medical College, College of Physicians and Surgeons, 1904; Associate Fellow of the American Medical Association; affiliated with Columbus Hospital; medical director of the Northwestern Life Insurance Company; died in the Virginia Mason Hospital March 30, aged 72, of coronary thrombosis.

**McCullough, Malcolm Kelley** ✠ Dallas, Texas; University of Texas School of Medicine, Galveston, 1921; clinical assistant professor of ophthalmology at Southwestern Medical School of the University of Texas; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Ophthalmology; affiliated with Baylor University and Parkland hospitals; died recently, aged 56, of coronary thrombosis.

**McIntosh, William Verne,** Highland Park, Mich.; University of Toronto Faculty of Medicine, Toronto, Canada, 1914; member of the American Medical Association; served during World War I as a member of the Canadian Army Medical Corps; for many years physician for the Highland Park schools; member of the board of health; member and past president of the staff of Highland Park General Hospital; died recently, aged 61, of coronary thrombosis.

**McLaughlin, James Henry,** Chicago; College of Physicians and Surgeons, medical department of the University of Southern California, Los Angeles, 1917; served overseas during World War I; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with South Chicago Community Hospital and Illinois Central Hospital, where he died March 8, aged 61, of acute pancreatitis, following an operation.

**McMahan, Herbert Grimes,** Westville, Ind.; Indiana University School of Medicine, Indianapolis, 1936; served during World War II; superintendent of the Norman M. Beatty Memorial Hospital; died in Topeka, Kan., March 4, aged 40, of suffocation caused by fire in his hotel room.

**McMeel, James Eugene,** South Bend, Ind.; Rush Medical College, Chicago, 1913; member of the American Medical Association; past president of St. Joseph County Medical Society; served during World War I; in 1935 appointed medical supervisor and director of Notre Dame University; past president and for many years a member of the board of health; affiliated with St. Joseph's Hospital, where he had been president of the staff; died March 26, aged 63.

**McNelis, Thomas James** ✠ Indiana, Pa.; Jefferson Medical College of Philadelphia, 1913; specialist certified by the American Board of Otolaryngology; past president of the Indiana County Medical Society; affiliated with Indiana Hospital; died in Atlantic City, N. J., March 13, aged 61, of acute coronary occlusion.

**Meredith, Lida Orem,** Cambridge, Md.; L. R. C. P., of London, and M. R. C. S., of England, 1934; died in Johns Hopkins Hospital, Baltimore, March 7, aged 57, of carcinoma of the breast with metastases.

**Miller, Frederick Munger** ✠ Utica, N. Y.; Long Island College Hospital, Brooklyn, 1891; an Associate Fellow of the American Medical Association; affiliated with St. Elizabeth Hospital; died March 11, aged 83, of nephrosclerosis.

**Minoka-Hill, Lillie Rosa,** Oneida, Wis.; Woman's Medical College of Pennsylvania, Philadelphia, 1899; member of the American Medical Association; died in St. Agnes Hospital, Fond du Lac, March 18, aged 75, of cirrhosis of the liver.

**Monfort, Willard** ✠ Highland Park, Mich.; University and Bellevue Hospital Medical College, New York, 1899; emeritus member of the Michigan State Medical Society; died in Henry Ford Hospital, Detroit, recently, aged 78, of coronary occlusion.

**Morgan, William Harries,** Newark, Ohio; Starling-Ohio Medical College, Columbus, 1909; served during World War I; formerly city health officer; affiliated with Newark City Hospital, where he died Feb. 7, aged 67.

**Morse, Russell Wright** ✠ Minneapolis; University of Minnesota Medical School, Minneapolis, 1920; clinical assistant professor of radiology at his alma mater and the University of Minnesota Graduate School; specialist certified by the American Board of Radiology; member of the Radiological Society of North America; affiliated with St. Barnabas Hospital; died in Panama City, Fla., recently, aged 57, of aplastic anemia.

**Mraz, John Joseph** ✠ Erie, Pa.; University of Michigan Medical School, Ann Arbor, 1930; affiliated with St. Vincent and Hamot hospitals; died March 12, aged 47, of heart disease.

**O'Day, George Frederick,** Worcester, Mass.; Harvard Medical School, Boston, 1901; member of the American Medical Association; affiliated with St. Vincent Hospital, where he died Jan. 18, aged 77, of coronary thrombosis.

**Palm, Walter Gilbert,** Chicago; Chicago College of Medicine and Surgery, 1910; served during World War I; died in South Chicago Hospital April 6, aged 68.

**Palmer, William Lucius** ✠ Albert Lea, Minn.; Rush Medical College, Chicago, 1896; fellow of the American College of Surgeons; served during World War I; one of the founders of the Naeve Hospital, where he was on the staff and where he died March 8, aged 84, of diabetes mellitus and nephritis.

**Pasley, Harry Walter** ✠ Reedley, Calif.; Indiana University School of Medicine, Indianapolis, 1909; at one time practiced in Indianapolis, where he was superintendent of the Indianapolis City Dispensary; died recently, aged 67, of coronary occlusion and arteriosclerosis.

**Paterson, Douglas Campbell,** Yonkers, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; member of the American Medical Association; served during World War I; emeritus surgeon on the staff of St. John's Riverside Hospital; died in Lawrence Hospital, Bronxville, Feb. 26, aged 71.

**Pearce, James H. M.,** Falkner, Miss.; Memphis (Tenn.) Hospital Medical College, 1904; died Jan. 2, aged 79, of arteriosclerotic hypertension and myocardial failure.

**Penick, Rawley Martin,** New Orleans; University of Virginia Department of Medicine, Charlottesville, 1893; fellow of the American College of Surgeons; formerly on the staff of the T. E. Schumpert Memorial Sanitarium in Shreveport; died Feb. 18, aged 80, of carcinoma of the lung.

**Peters, Joseph Theodore** ✠ South Charleston, W. Va.; Medical College of Virginia, Richmond, 1927; served during World War II; member of the medical staff at Carbide and Carbon Chemicals Corporation; died March 12, aged 49, of a heart attack.

**Petty, Charles Napoleon** ✠ Altamont, Kan.; Kansas City Medical College, 1896; affiliated with Mercy Hospital in Parsons; died in Bird City March 16, aged 82, of cerebrovascular accident, hypertension, and cardiac decompensation.

**Philson, John Rush,** Racine, Ohio; Starling Medical College, Columbus, 1897; member of the American Medical Association; served on the staff of Holzer Hospital in Gallipolis, where he died March 9, aged 75.

**Phipps, John Catron,** Fries, Va.; Medical College of Virginia, Richmond, 1916; died Feb. 2, aged 65, of coronary thrombosis.

**Pijan, Leopold H.** ✠ Chicago; Illinois Medical College, Chicago, 1904; on the staff of the Swedish Covenant Hospital; died March 29, aged 73, of coronary occlusion.

**Piper, Arthur Sylvester,** Enid, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1911; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; president of the Garfield County Medical Society in 1935; member of the staff of the Enid General Hospital; died recently, aged 71, of cerebral hemorrhage.

**Post, Sidney Haymond** ✠ Volga, W. Va.; Jefferson Medical College of Philadelphia, 1901; served during World War I; died in Clarksburg March 8, aged 73, of carcinoma of the nasopharynx.

**Poth, Norman Alfred** ✠ Seguin, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1908; past president of the Guadalupe County Medical Society; died recently, aged 70, of acute heart failure.

**Pratt, Ezekiel,** Brewster, Mass.; Harvard Medical School, Boston, 1912; member of the American Medical Association; school physician; served on the staff of the Symmes Arlington Hospital in Arlington; died Jan. 18, aged 65, of coronary occlusion.

**Putnam, William B.,** Carnegie, Okla.; University of the South Medical Department, Sewanee, Tenn., 1907; died recently, aged 81, of carcinoma.

V 14
1952

# GOVERNMENT SERVICES

## ARMY

**Symposium on Military Medicine.**—A military-civilian symposium will be held at Murphy Army Hospital in Waltham, Mass., June 23-25. Medical and dental officers of the military services are invited. Arrangements are being made to give reserve officers of the medical and dental corps credit points for full attendance.

Army doctors will make 22 presentations, which will then be discussed by civilian physicians. On Monday evening, dinner at 7 p. m. will be preceded by an informal reception at 6. Dr. Isidor S. Ravdin, professor of surgery, University of Pennsylvania School of Medicine, Philadelphia, will deliver the dinner address on "Shock." The sessions will conclude with a tour of medical and surgical clinics of the Greater Metropolitan Boston area on Wednesday.

**Personals.**—David B. Dill, Ph.D., scientific director of the Army Chemical Corps Medical Laboratories, addressed the faculty and students of the University of Maryland in May on "Medical Research in Chemical Warfare."——Col. Arthur P. Long, assistant chief, preventive medicine division, Office of the Surgeon General of the Army, was the principal speaker at the forum conducted by the Harvard School of Public Health, Boston, April 10. Col. Long discussed "Military Preventive Medicine in the Far East."

## VETERANS ADMINISTRATION

**Compensation and Pension Payments Increased.**—President Truman signed a bill May 23 which will provide more than 3 million veterans and dependents of deceased veterans with increases in compensation and pension payments, effective July 1. The President also signed a companion bill increasing the amount of income a person may have and still be eligible for pension payments in non-service-connected disability and death cases. Under the old limits, an otherwise eligible veteran or widow having an income in excess of $1,000 annually, without dependents, or $2,500 with dependents, could not qualify for a pension. These limits have been raised to $1,400 and $2,700, respectively.

Congress, in passing these two laws, estimated they will add $202,460,000 to compensation and pension payments during fiscal year 1953.

VA explained that compensation is payable for service-connected disabilities, whereas, pension is payable for permanent and total disability resulting from non-service-connected conditions. Under the new law, all monthly rates of compensation paid veterans for service-connected disabilities rated from 10 to 49% are increased by 5%, while those rated from 50 to 100% are increased by 15%. The new rates will affect the nearly 2 million wartime and post-Korea veterans who were receiving compensation payments on March 31, 1952.

Compensation rates for veterans with peacetime service are 80% of the wartime rates. Nearly 60,000 veterans drawing compensation under peacetime rates receive increases under the new schedule. Statutory allowances provided for specific disabilities such as loss of legs, arms, and eyes, are not affected by the new law. Monthly compensation rates for 560,000 dependents of deceased veterans who died of service-connected disabilities and who served either during wartime or since June 27, 1950, are set by the new law. No increases were provided for widows without children or for dependent parents of deceased veterans.

**Psychiatric Residencies Available.**—Residencies in psychiatry are available at the Veterans Administration Hospital, Hines, Ill., beginning July 1, 1952, for a period of three years. The residency program is under the direction of the department of psychiatry, University of Illinois. The hospital is within commuting distance of all other psychiatric facilities in the Chicago area. The training is fully accredited by the American Board of Psychiatry and Neurology.

**Hospital News.**—Dr. Newton Bigelow, commissioner of the department of mental hygiene, State of New York, addressed the staff at the Veterans Administration Hospital, Northport, L. I., May 23, on "The Differential Diagnosis of Schizophrenia."

**Personal.**—Dr. Irvin J. Cohen, chief, professional services, Veterans Administration Hospital in the Bronx, New York, has been appointed manager of the new 295 bed tuberculosis hospital in Baltimore, Md., now under construction.

## PUBLIC HEALTH SERVICE

**Trainees from Nepal and Thailand.**—Two physicians from Southeast Asia are in the United States for advanced study arranged by the Public Health Service. The training is conducted under federal programs of technical aid to other countries. Dr. Prakashi B. Basnyat is the first public health trainee to come here from Nepal. He teaches at the Civil Medical School there. He has been awarded a residency in surgery at the Veterans Hospital, Aspinwall, Pa.

Dr. Chalerm Prommas, dean of the University of Medical Sciences in Thailand, is making a survey of medical schools under the sponsorship of the Mutual Security Agency. He is reviewing American and European methods of teaching medicine and allied subjects as well as the administration of schools that provide this training. Dr. Prommas plans to begin a long-range program to raise teaching standards in the schools of medical sciences in Thailand.

**Report on Toxoplasmosis.**—The Public Health Service has just published a brochure on toxoplasmosis (Public Health Service Publication No. 141) by Drs. Jacob Karl Frenkel of the Rocky Mountain Laboratory, National Institutes of Health, and Saul Friedlander of Mercy Hospital, Sacramento, Calif. The cases described in the report were selected from those observed during 1944-1947 in hospitals associated with the University of California Medical School, San Francisco. The clinical histories of five fatal and two surviving cases of neonatal toxoplasmosis are presented, along with autopsy findings of four of the fatal cases. Diagnostic methods and their interpretation are described in detail. Treatment methods are outlined. The report discusses transplacental infection, asymptomatic toxoplasmosis, the occurrence of chorioretinitis, and other clinical syndromes and their significance.

Copies of "Toxoplasmosis" can be purchased for 50 cents from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

**Insect Control.**—A water projects section has been established in Salt Lake City, Utah, by the Communicable Disease Center of the U. S. Public Health Service. Dr. Stanton J. Ware is chief of the new section. The purpose of the new unit is insect prevention and control whenever this is a public health problem in areas where water development projects are underway. The primary objective is to provide guidance on insect prevention and control methods to groups working on new water projects. These measures also will be adapted to operation and maintenance phases of irrigation projects. Later the program will aid in insect elimination and control for water projects completed prior to this time.

The new section will cooperate with state health departments in developing insect vector control organizations. Local communities will be assisted, through the state health departments, in the organization of mosquito abatement districts. To anticipate problems arising from new water development projects, the section will participate with state health departments in making surveys. At present it is engaged in evaluating insect problems associated with river basin developments planned by federal, state, and local agencies in the lower Mississippi, Northeast, Pacific Northwest and Missouri River basins.

# FOREIGN LETTERS

## ITALY

**International Convention of Fluorography.**—The First International Convention of Fluorography, attended by more than 700 physicians and medical technicians from Italy and other countries, was held in the sanatorium village of Sondalo. It was promoted by the High Commission of Hygiene and Public Health and was organized by its central committee on fluorography in collaboration with the Italian League Against Tuberculosis and other national institutions, including the Institute for Social Insurance. The aims of the convention were to ascertain the present phase of evolution of the fluorographic method and to determine ways for a closer collaboration between the institutions and the researchers of every country.

Professor Cramarossa, general director of the medical services of the High Commission, discussed the place of fluorography in the services of the public health board. He pointed out that during the last few years fluorography has assumed great importance from many points of view and that limiting it to early diagnosis of tuberculosis would constitute a grave error.

Other diseases, such as those of the circulatory system, are increasing, and their death rate is, in general, much higher than that of tuberculous diseases. In fact, the statistics for 1950 show that the nosological picture of mortality in Italy has changed greatly. The death rate for infectious diseases has decreased about 60% compared with that of the period 1936-1938 and that for diseases of the respiratory system about 62% for the same time. On the other hand, the death rate for diseases of the circulatory system has increased and occupies at present first place, followed by diseases of the nervous system, and then tumors.

Fluorography may be of great help in this field, but it presents many problems. The speaker called attention to the following questions. 1. What aid should or could be given to the fluorographic services? 2. Are stationary centers preferable to mobile centers? 3. Which national or state-approved institutions may contribute to the practical solution of the problem?

In the discussion that followed, Professor Ragazzi, director of the Bureau of Hygiene and Health of Milan, opposed the constitution of a national center of fluorography and asserted that in an organized system of fluorographic centers he would give his choice to stationary centers. He was against the centralization of the results of fluorographic investigations, although he admitted that accurate and controlled statistics may be collected.

Professor Canaperia explained some graphs related to the statistics taken by the central fluorographic office of the High Commission during 1949 and 1950. Fluorograms of about 550,000 persons in all Italy showed that lesions to organs of the chest were found in 13% of them, while the incidence of active pulmonary tuberculosis was about 0.58%. About 1,000 lire was spent for every person with a lesion of whom fluorograms were taken.

General Ferri, M.D., director of the board of military health in the Italian army, reported on the use of fluorography in the military organization. Fluorograms taken of about 85,000 men revealed active pulmonary tuberculosis in 0.82%, results of previous tuberculous processes in 1.6%, and of previous lesions to the pleura and the diaphragm in 4.27%.

*Tuberculous Diseases of Thorax.*—Professor Costantini, president of the Italian League Against Tuberculosis, reviewed the history of fluorography. He stated that in 1912 Vittorio Maragliano advocated the systematic investigation of apparently healthy persons for concealed tuberculous lesions. Then, during the convention of radiology in Parma in 1932, the institution of a "radiologic card" in schools was advocated. This card was to represent in the field of health what the graded report card represents in the field of learning. But, when De Abreu introduced fluorography in 1936, the problem was solved from the technical and financial point of view. According to competent radiologists, from the diagnostic point of view the fluorogram is, without any doubt, inferior to the radiogram, and, therefore, one should be cautious in establishing a diagnosis; however, fluorography may be of inestimable value in revealing deviations and alterations of an apparently normal radiological picture. But these deviations must be investigated clinically before a definitive diagnosis is established.

Professor Bauer, from the central dispensary of Stockholm, reported on the results of the fluorography campaign organized by the municipal council of the city in 1949. The investigations revealed a great number of tumors and heart lesions, thus justifying the fluorographic examination in those countries in which tuberculosis is decreasing.

*Nontuberculous Diseases of Thorax.*—Professor Condorelli, a pathologist from the University of Rome, felt that mass fluorographic examination to detect diseases of the cardiovascular apparatus is not less important than that to detect tuberculosis. The disadvantages and harm to society because of lack of means to prevent cardiocirculatory diseases appear evident especially when considering that, for example, rheumatic heart diseases affect many young persons who should give the nation 20 to 30 years of constructive work. Often these heart diseases are concealed in a clinical examination, whereas they can be detected with fluorography, and there are great possibilities of arresting in young persons a heart lesion in its initial phase of growth and of treating a recent anatomic lesion. Among other nontuberculous diseases that may be detected with fluorography, Professor Condorelli spoke of pneumonoconiosis, bronchiectasis, Echinococcus cyst, and tumors of the lung.

## LONDON

**Annual Report of Medical Council.**—From the members' point of view the most disturbing feature of the annual report of the Council of the British Medical Association for 1951 and 1952, which has just been published, is a recommendation that the annual subscription be increased by 50%, from £4.4s. to £6.6s. On Dec. 31, 1951, the membership was 66,064, as compared with 64,187 on Dec. 31, 1950. By March, 1952, the membership had dropped by 1,000. The present membership represents about 75% of the total profession in the United Kingdom and about 83% of the practicing physicians. The annual general meeting this year is to be a joint one with the Irish Medical Association in Dublin in July. The Council has accepted an invitation to hold the annual meeting jointly with the Canadian Medical Association in Toronto in 1955, "subject to the exchange position being satisfactory." It is reported that "the Council has reconsidered its attitude towards the rule of professional secrecy, and it is with a full sense of the importance of the rule and the undesirability of any departure from it save in exceptional circumstances that the Council recommends: 'that in general it is a practitioner's obligation to observe strictly the rule of professional secrecy by refraining from disclosing voluntarily without the consent of the patient (save with statutory sanction) to any third party information which he has learnt in his professional relationship with the patient; but that there will doubtless occur certain special occasions when it may become a doctor's moral or social duty for the protection of innocent persons to make disclosure to an interested party if the patient, after having been properly and clearly advised as to the appropriate action which he should take, refuses or fails to do so on his own responsibility.' "

The First World Conference on Medical Education, under the sponsorship of the World Medical Association, is to be held in

The items in these letters are contributed by regular correspondents in the various foreign countries.

V 14
1952

London in August, 1953. The Council has offered to place rooms and secretarial staff at the disposal of the conference and is co-operating with the organizing committee appointed by the W. M. A. in making arrangements for the conference.

**Marriage and Divorce.**—An appendix to the annual report of the British Medical Association consists of the memorandum of evidence submitted by the Council to the Royal Commission on Marriage and Divorce. The Council urges that the divorce court should concern itself with the relief of suffering and hardship affecting both partners and children rather than the allocation of blame for the breach of the marriage contract. It also recommends that means for conciliation should be established by court welfare officers. As the law stands at the moment a man may marry his deceased wife's sister but not his divorced wife's sister. The Council believes that there is no medical reason for this ban and it should therefore be removed; conversely, a woman should be able to marry her deceased or divorced husband's brother. It is of interest to note here that the Medical Women's Federation is not in agreement with this recommendation. There are also recommendations for amending the law relating to mental deficiency, recurrent fits of insanity, and epilepsy as grounds for nullity. The gist of these is that the criterion of mental deficiency as grounds for nullity should be the actual existence of a state of mental deficiency irrespective of whether or not the case has been certified. Epilepsy should not be singled out as grounds for nullity. "There should be a general clause providing for nullity if either party knew of, and concealed from the other, the existence of some grave disease or abnormality likely to be detrimental to the happiness of the marriage." It is also recommended that the woman partner to a nullity suit should always be given the opportunity of examination by a woman physician.

At the moment a divorce can be obtained on the grounds that the defendant "is incurably of unsound mind and has been continuously under care and treatment for a period of at least five years immediately preceding the presentation of the petition." It is proposed that this should be amended so that the criteria are "the actual duration of the mental disorder as shown by medical evidence in each case, the unlikelihood of recovery, and one year's continuous residence as a patient in mental hospitals or licensed homes immediately preceding the presentation of the petition." The following recommendations are included: (1) The legal definition of cruelty in its application to marriage and divorce should be amended so that the nature of the conduct in question is the criterion, regardless of whether such conduct is willful. (2) The fact that a woman leaves her husband under extreme provocation or danger or to protect her children should not prejudice her case in any legal action. In cases of divorce proceedings on grounds of desertion where the deserting partner during some part of the material three years has been a patient in a mental hospital, it is proposed that the court should have full discretion to decide whether the intention to desert has existed continuously during the whole of the period. A further recommendation with regard to desertion is that "where a man deserts his wife and later, having nowhere else to go, forces his way back into the house and cohabits with her, condonation should only be presumed where there is real evidence that the wife has forgiven the husband and has agreed to take him back." It is also recommended that insanity should not be held to be a valid defense to an allegation of adultery or one of unnatural defense (at present sodomy and bestiality are grounds for dissolution at the suit of the wife.) It is further recommended that Lesbianism should be included as grounds for dissolution at the suit of the husband.

It is considered that separation by agreement, when there is no prospect of reconciliation, should be grounds for divorce, and that it should be possible for the petition to be presented by either party or, if they are agreed, by both partners jointly. When there are grounds for divorce but the offended party refuses to take action, it is considered that the offending party should, after a period, be able to sue for divorce. Collusion should only be a discretionary bar to divorce. Finally, it is recommended that marriage should make legitimate a child born before the marriage irrespective of whether at the time of the birth either party was free to marry, and that dissolution of marriage should not deprive a child of legitimate status. In cases of artificial insemination, when the consent of the husband has been obtained, he should for all purposes be regarded as the legal father of the child.

**Cross Infection in Hospital.**—"The contrast between the remarkable advances in safe surgery, made possible originally by Lister's pioneer work, and the oldfashioned and dangerous procedures still permitted in many hospital wards is unfortunately only too glaring. The practices now revealed should certainly not be tolerated." This is *The Times* in its best denunciatory editorial form, which earned for it the title of "The Thunderer" last century. The occasion, unfortunately, is 1952, and the topic is the state of affairs revealed by a recent article in *The Lancet*. The article, which deals with cross infection in hospital wards, is based on facts ascertained by a team appointed by the Nuffield Provincial Hospitals Trust and the University of Bristol. Records were reviewed from 13 wards in eight hospitals, covering 5,095 patients under care during 1950. The over-all incidence of infection was 9.9%. The highest rate of infection was 21%, and this occurred in a children's ward "specially selected because it was very old and badly constructed, with few amenities." The incidence of infection in the other children's ward included in the survey was 15%. The lowest figure was in a general surgical ward, 3%, and the incidence in the maternity wards was relatively low, 5 to 6%. The rate in wards for special surgery was high: neurosurgery 19%, plastic surgery 18%, and thoracic surgery 15%. The types of infection varied. In the children's wards the common cold headed the list, followed by upper respiratory infections; the organisms most commonly isolated were Staphylococcus aureus and Streptococcus hemolyticus. In the maternity wards the commonest infections were urinary infection and puerperal infection; the organisms involved included Endamoeba coli, Staph. aureus, Str. faecalis, and Str. hemolyticus. In the surgical wards, wound infections were comparatively common, followed by colds and respiratory infections; the causative organisms included Staph. aureus, E. coli, Proteus vulgaris, and Pseudomonas pyocyanea. In three surgical wards it was estimated that 40 patients out of 851 had their stay in the hospital prolonged an average of 21 days per patient, because of an acquired infection.

What is even more disturbing than these actual figures are the conditions found in these and in an additional 11 wards that were investigated. Most of the wards were of the large open type, and the average space between the centers of the beds was 7 ft., compared with the 8 ft. recommended by the Medical Research Council. Nurses were not always provided with adequate means of washing their hands. In one ward there were no washbasins at all; in another enamel basins were used, which had to be filled and emptied in the ward kitchen. No courses of instruction in elementary hygiene were provided for the ward domestic staff, and only one ward had a modern sink unit for washing up crockery and utensils. Only two of the wards had treatment rooms for the dressing of wounds, and only a small minority had bins with lids and foot pedals for the disposal of dirty dressings. "In a ward of a teaching hospital the surgeon had provided suitable bins at his own expense." The patients' bathroom and toilet often opened off the sluice room, and the bathroom was "used for many purposes other than bathing patients," among them, storing dirty linen bins, pillows, and the outdoor clothes of the domestic staff. "The design of most sluice-rooms was a muddle." None of the 24 wards had either bedclothes or oiled floors. The usual practice was to sweep the floor with a broom two or three times daily. Refrigerators that stored milk were used to store pathological specimens as well, pending transfer to the laboratory. In five wards, including an acute surgical ward, masks were never worn. In one ward of 32 patients there were only two clinical thermometers. "It was usual to change the disinfectant for clinical thermometers once a week, but a few wards changed it daily and some every fourteen days—or when someone remembered." In several wards syringes were kept in alcohol, and the procedure for sterilizing sputum mugs was most variable: the contents were usually emptied down the sluice without the containers being disinfected; the mugs were then cleaned in the sink. They were then usually boiled, but "a fair number of wards did not boil them."

## PARIS

**Occupational Intoxication by Androgens.**—Professors Justin-Besançon and H. Dessoille and Drs. H. P. Klotz and H. Cyna report a case of androgen poisoning in a woman chemist, in whose previous medical history allergic reactions to benzene vapors were noted. In May, 1949, she was employed in the manufacture of methyltestosterone. Two months later she had a slight pruriginous erythema, and six months later hair developed on the upper lip and beneath the chin. The voice became harsh, and there was delayed onset of menstruation, with diminution of the flow. There were no changes of behavior and no cardiovascular signs. Cutaneous tests with methyltestosterone evoked further acne lesions on the face and on the chest, as well as maturation of older ones. One month after the discontinuation of her professional activities, the eruption regressed and menstruation became normal. Another test caused reappearance of acne, hirsutism, and delayed menstruation. The patient contends that acne lesions develop whenever she enters a room where androgens or their precursors are handled. The authors stress the necessity of observing carefully these forms of occupational intoxication, of studying means of protection, and of requesting their inclusion on the list of occupational diseases.

**Rheumatic Fever Following Parasitic Allergy.**—E. Doumer, A. Lorriaux, and C. Belbeniot described a 36-year-old woman who suffered at the ages of 16, 19, and 32 from acute rheumatoid arthritis, refractory to sodium salicylate; moreover, since she was 12 years old she had suffered from sudden, violent crises accompanied by nausea, vomiting, and cephalea, considered by attending physicians as gallbladder attacks. The present crisis began without angina but with violent pains in the lumbar region, followed by multiple arthropathies in the ankles, knees, hands, and wrists; her temperature was 40 C; the hemogram revealed 2,800,000 red corpuscles, 12,400 white corpuscles, and 180,000 platelets; the bleeding time was four minutes. Examination of the fundus of the eye revealed some slight hemorrhages. Salicylate treatment yielded no appreciable results. Penicillin treatment at the daily dose of 4 million I. U. brought the temperature down to 38 to 39 C, but the morbid picture remained unchanged and was not modified by the addition of streptomycin. Five days after her admission to the hospital, the patient complained of sharp pains in the right hypochondrium with nausea and vomiting. The general condition became worse, and extreme asthenia and a yellowish pallor were present; the surgeon had to postpone the contemplated operation. On the following day the patient eliminated a dead Ascaris in her stools, and her condition returned rapidly to normal. After this spontaneous recovery, the authors performed a test in the patient by injecting subcutaneously 0.5 cc. of an extract of A. equi, prepared according to the technique of the Lille Pasteur Institute. This injection, ineffective in two control subjects, provoked in the patient, two hours later, sharp pains in the right epigastrium with cephalea, nausea, and vomiting. These disorders lasted for 24 hours and were followed by multiple arthralgias, intense pruritus, and asthenia for seven days.

In the *Lyon Medical* of March 9, 1952, P. Ravault, M. Pont, and L. Berthier mention a case of rheumatic fever accompanied by myocarditis set off by a food allergy. They stress that it is the first published case of rheumatic fever of allergic origin with cardiac involvement.

**Specialized Instruction for Hairdressers.**—Recently a number of accidents due to hair dyes have occurred, particularly with paraphenylenediamine, whose use has been forbidden to hairdressers. A ministerial decree has rendered it compulsory to form a test one or two days previous to the application of the dye. This raises the question of the need for instruction for hairdressers in such subjects as anaphylactic reactions and their recognition, toxicity of materials used, occupational diseases, and hygienic measures for clients and for assistants. The National Academy of Medicine appointed a special committee to study hairdressers' schools, and it was decided that this teaching should be entrusted to qualified physicians, appointed by the superior commission for the prophylaxis of venereal diseases.

# COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

## THE MATCHING PLAN FOR INTERNSHIP APPOINTMENTS

The National Interassociation Committee on Internships has recently published its report on the first year of operation of the matching plan for the appointment of interns. The report indicates that, in spite of some initial misunderstanding about the purposes and methods of operation of the plan, the results on the whole were quite satisfactory.

The matching plan was adopted as the official method for the appointment of interns by the National Interassociation Committee after a successful trial run last year. This committee is composed of representatives from the Council on Medical Education and Hospitals of the American Medical Association, the Association of American Medical Colleges, the American Hospital Association, the American Protestant Hospital Association, and the Catholic Hospital Association, with liaison representatives from the government services that sponsor intern training programs. The plan is self-supporting, being financed by fees from the senior medical students and the hospitals participating in the program.

Although the actual matching mechanism is rather involved, the principle of the matching plan is simple. Essentially, the senior student's choice of hospitals to which he has applied for appointment is matched with the hospitals' rating of him as an applicant. The student participating in the plan submits to the National Interassociation Committee's office a confidential list ranking the hospitals to which he has applied in the order of his preference for appointment. Participating hospitals, in turn, send to the central office their confidential lists rating the students who have applied for appointment in the order of their preference for the applicant. These lists are then "matched," with the result that each student receives appointment to the hospital to which he has applied highest in order of his ranking which in turn has listed him as acceptable and has an appointment available.

That the plan does give effect to the students' and hospitals' preferences is seen in the results of this year's operation. Of the 5,564 students appointed through the matching plan, 4,698 (84%) were matched with hospitals that the applicants had rated first on their confidential lists. An additional 565 students (10%) received appointments in hospitals that were second in their order of preference. Of those students receiving their second choice of internships, 382 failed to obtain appointment in hospitals that they had rated highest in their preference order because appointments to these hospitals had already been filled with applicants whom the hospital preferred. The remaining 177 students who were matched with hospitals listed as second choice were eliminated as acceptable candidates by their first choice hospitals. From the standpoint of those hospitals that appointed interns through the plan, the results were just as successful, with 92% of the interns appointed having been listed by the hospital as first or second choice (74 and 18% respectively).

The matching plan does not distribute interns nor does it restrict the number of interns a hospital may seek. It was established only to facilitate the appointment procedure and to give effect to the applicants' preferences for internships and the hospitals' preferences for students applying to them. There is no attempt, under the plan, to interfere with the freedom of negotiation between prospective applicants and hospitals. It does require that students accept appointments to hospitals to which they have applied and with which they are matched through the operation of the plan. The hospital likewise agrees to offer internships to those applicants it has listed as desirable who are available for appointment on the basis of the matching procedure.

The National Interassociation Committee on Internships has begun to formulate its plans for the operation of the matching plan for next year. It is expected that both hospitals and students alike will utilize the plan to the fullest extent now that it has been proved successful and to their mutual advantage.

V 14
1952

# Postgraduate Continuation Courses for Physicians

**Compiled by the Council on Medical Education and Hospitals for the Period July 1, 1952 to Jan. 15, 1953**

## Table of Contents


| Subject | Page | Subject | Page | Subject | Page |
|---|---|---|---|---|---|
| Allergy | 681 | Fractures | 686 | Pathology | 693 |
| Anatomy | 681 | Gastroenterology | 686 | Pediatrics | 694 |
| Anesthesiology | 681 | Geriatrics | 686 | Pharmacology | 694 |
| Arthritis | 682 | Hematology | 686 | Physical Medicine | 694 |
| Bacteriology | 682 | Histology | 686 | Physiology | 694 |
| Basic Science | 682 | Industrial Medicine | 686 | Plastic Surgery | 695 |
| Biochemistry | 682 | Internal Medicine | 687 | Poliomyelitis | 695 |
| Cardiovascular Disease | 683 | Malignant Disease | 687 | Proctology | 695 |
| Dermatology & Syphilology | 683 | Medicine, General | 688 | Public Health | 695 |
| Diabetes | 684 | Neurology & Psychiatry | 689 | Radiology | 695 |
| Diseases of the Chest | 684 | Nuclear Science | 690 | Surgery | 696 |
| Electrocardiography | 684 | Nutrition | 690 | Therapy | 698 |
| Electroencephalography | 685 | Obstetrics & Gynecology | 690 | Tropical Medicine | 698 |
| Endocrinology | 685 | Oncology | 691 | Urology | 698 |
| Endoscopy | 685 | Ophthalmology & Otolaryngology | 691 | Venereal Diseases | 698 |
| Forensic Medicine | 685 | Orthopedic Surgery | 693 | Footnotes | 698 |


*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **ALLERGY** | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 1 Month Personal Course in Allergy | 1st of every month, full time | $200.00 |
| | 6 Month Personal Course in Allergy | 1st of every month, full time | 500.00 |
| | Personal Course in Allergy and Related Conditions | September 17, 10 sessions | 125.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. At: Receiving Hospital | Allergy Clinic and Conference | Quarterly, part time | 25.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. At: Mt. Sinai Hospital | Allergy (Medicine PM 36) | November 14-15, full time | 20.00 |
| At: Montefiore Hospital | Allergy (Medicine PM 68) | September 23-December 4, part time | 50.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 East 106th St., New York 29, N. Y. | Allergy | Arranged, 2 months, part time | 50.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5415-A Allergy | November 10-21, full time | 200.00 |
| University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals | Allergy | Arranged, 2 weeks, full time | Arranged |
| | **ANATOMY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Surgical Anatomy Demonstrations and Lectures Upper and Lower Extremities | October 1-January 7, part time | 50.00 |
| | Surgical Anatomy Demonstrations and Lectures Thorax, Abdomen and Pelvis | January 14-April 8, part time | 50.00 |
| | Surgical Anatomy Demonstrations and Lectures Head and Neck, Thorax, Abdomen and Pelvis; Upper and Lower Extremities | October 1-June 3, part time | 250.00 |
| Mercy Hospital, Hillcrest Drive, San Diego, Calif.[2] | Anatomy | Annually, 60 hours per year | 50.00 |
| San Diego County General Hospital and Mercy Hospital, San Diego, Calif. | Gross and Applied Anatomy (including demonstrations and dissections on cadaver) | Throughout the academic year, part time | None |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Anatomy of the Extremities on the Cadaver | October 1, 10 sessions | 125.00 |
| University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1, Md. | Anatomy of Head and Neck as Applied to Eye, Ear, Nose and Throat Boards | October, 35 sessions, part time | 75.00 |
| | General Anatomy | Arranged, full or part time | Arranged |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Selected Readings in Physical Anthropology | Quarterly, 12 weeks, part time | Not given |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Applied Anatomy for the General Surgeon | Arranged, part time | 375.00 |
| | Anatomy of the Thorax | Arranged, part time | 150.00 |
| | Anatomy of the Abdomen | Arranged, part time | 150.00 |
| | Applied Anatomy for the Otolaryngologist | Arranged, part time | 275.00 |
| | Applied Anatomy of the Urogenital System | Arranged, part time | 300.00 |
| | Applied Anatomy for the Anesthesist | Arranged, part time | 275.00 |
| | Anatomy for the Orthopedic Surgeon | Arranged, part time | 150.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 411-A Anatomy of the Head and Neck | September 29-December 19, part time | 90.00 |
| | 412-A Anatomy of the Thorax and Its Viscera | January 5-March 27, part time | 90.00 |
| | 413-A Anatomy of the Abdomen | September 29-December 19, part time | 90.00 |
| | 414-A Anatomy of the Female Pelvis | September 29-December 19, part time | 90.00 |
| | 415-A Anatomy of the Genitourinary System | January 5-March 27, part time | 90.00 |
| | 416-A Anatomy of the Musculoskeletal System | January 5-March 27, part time | 90.00 |
| School of Medicine, Western Reserve University, 2109 Adelbert Rd., Cleveland 6, Ohio | Anatomy 11-G | October 1-April 30, part time | 75.00 per month |
| | **ANESTHESIOLOGY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Anesthesiology | Every 2 months, 4 months, full time | 300.00 |
| St. Francis Hospital, 114 Woodland St., Hartford, Conn. | General and Regional Anesthesiology | July, October and January, part or full time, 1 month to 2 years | None |
| American Society of Anesthesiologists, Inc., 188 W. Randolph St., Chicago, Ill. At: Bellevue-Stratford Hotel, Philadelphia | Annual Refresher Lecture Course | November 11-14, part time | 1.50 per lecture hour |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **ANESTHESIOLOGY—Continued** | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Practical 2 Weeks Course in Spinal and Intravenous Anesthesia | Every 2 weeks by appointment | $150.00 |
| | Practical 1 Month Course in Nitrous Oxide and Ether Anesthesia | 1st of every month by appointment, full time | 125.00 |
| | Practical 1 Month Course in Ether, Nitrous Oxide, Ethylene and Cyclopropane Anesthesia | 1st of every month by appointment, full time | 200.00 |
| | Practical 2 Weeks Course in Endotracheal Anesthesia | Every 2 weeks by appointment, full time | 150.00 |
| Boston University School of Medicine, 80 E. Concord St., Boston, Mass.<br>At: Massachusetts Memorial Hospitals | Postgraduate Course in Clinical Anesthesiology (Course Limited to One Student) | As often as there is an acceptable applicant, 3 months, full time | None |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Anesthesiology for General Physicians | January 8-10, full time | 25.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[87]<br>At: St. Catherines Hospital | Diagnostic and Therapeutic Nerve Blocking | October, 10 weeks, part time | 75.00 |
| At: Jewish Hospital | Anesthesiology | October, 6 weeks, part time | 30.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Clinical Anesthesiology | Arranged, 3 months, full time | 200.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Applied Anesthesia | October and January, 3 months, full time | 300.00 |
| | Anesthetic Technic | October and January, 6 weeks, full time | 100.00 |
| | Regional and Spinal Anesthesia | October and January, 6 weeks, full time | 100.00 |
| New York State Society of Anesthesiologists, 745 Fifth Ave., New York, N. Y.<br>At: Various Centers throughout the State | Postgraduate Training in Anesthesia | Continuously, hours arranged | None |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 513-A Anesthesiology (Graduate Course) | September 2, 1 year, full time | 700.00 |
| | 511-A Anesthesiology (for Specialists) | Beginning any Monday, September-June, 2 weeks, full time | 150.00 |
| | 512-A Regional Anesthesiology | September 2-13 and January 5-16, full time | 200.00 |
| | 514-A Anesthesiology | September 29-December 19, full time | 300.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.<br>At: Graduate Hospital and private offices | Segmental Neuralgias; Relief by Regional Anesthesia [59] | October-May, 1st of each month, 3 weeks, part time | 200.00 |
| University of Texas Postgraduate School of Medicine, Temple Division, Temple, Texas<br>At: Scott and White Memorial Hospitals | Anesthesiology | Arranged, 4 weeks, full time | Arranged |
| | **ARTHRITIS** | | |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Army and Navy Hospital, Hot Springs, Ark. | Arthritis and Allied Diseases [40,41,42] | December 1-5, part time | None |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Personal Course in Arthritis and Allied Rheumatic Diseases | September 26, 10 sessions | 100.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[87]<br>At: Jewish Hospital | Arthritis | October, 8 weeks, part time | 30.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5414-A Arthritis and Allied Rheumatic Disorders | July 7-18 and November 10-21, full time | 125.00 |
| D. T. Watson School of Physiatrics, Leetsdale, Pa. | Protective Body Mechanics in Arthritis | Arranged, full or part time | 10.00 |
| | **BACTERIOLOGY** | | |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Antibiotic Substances | September-December, part time | 15.00 |
| | Microbiology Seminar | Every quarter, 12 weeks, part time | 15.00 |
| | Recent Advances in Microbiology | September-December, part time | Not given |
| | Microbial Genetics | September-December, part time | 15.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Bacteriology | Arranged, 3 months, part time | 100.00 |
| | Immunology | Arranged, 6 weeks, part time | 50.00 |
| | Parasitology | Arranged, 6 weeks, part time | 75.00 |
| Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa. | Seminars and Investigations on Bacteriology | September-June, part time | None |
| | **BASIC SCIENCE** | | |
| University of Southern California, 1200 N. State St., Los Angeles 33, Calif.<br>At: U. S. Naval Hospital, San Diego | Clinical Basic Science Conference | October-June, 34 sessions | Not given |
| University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo. | Neuro-Anatomy and Neuro-Physiology | September 23-December 30, part time | 28.00 |
| University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1, Md. | Basic Sciences as They Apply to the Practice of Medicine | October, 32 weeks, part time | 50.00 |
| University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich. | Basic Sciences: Pathology | September 29-December 12, full time | 250.00 |
| | Basic Sciences: Bacteriology | December 15-19, January 5-9, full time | Not given |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Basic Science Course [1] | October, 9 months, full time | 810.00<br>Surgery 910.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Basic Medical Sciences | September 29-May 23, full time | 960.00 |
| | **BIOCHEMISTRY** | | |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Biological Catalysts | September-December, part time | 15.00 |
| | Survey of Medical Chemistry | September-December, part time | 15.00 |
| | Special Topics | September-December, part time | 15.00 |
| | Seminar in Physiological Chemistry | Quarterly, part time | Not given |
| | Intermediary Metabolism | December-March, part time | 15.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn.[56]<br>Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[87]<br>At: Beth El Hospital | Symposium on Potassium Metabolism | September 22-24, full time | None |
| Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa. | Clinical Biochemistry | October, 10 weeks, part time | 30.00 |
| | Literature Seminars | September-June, part time | None |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **CARDIOVASCULAR DISEASE** | | | |
| California Heart Association, 45 Second St., San Francisco 5, Calif.<br>At: St. Francis Hotel, San Francisco | Postgraduate Symposium on Heart Disease | October 22-25, full time | $17.50 |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Cardiology | January 7-March 4, part time | 35.00 |
| Los Angeles County Heart Association, 316 S. Bonnie Brae St., Los Angeles 5, Calif.<br>At: Wilshire Ebell Theatre, Los Angeles | 22d Annual Postgraduate Symposium | October 15-16, full time | 10.00 |
| University of Southern California, 1200 N. State St., Los Angeles 33, Calif.<br>At: Los Angeles County Hospital | Cardiology and Vascular Disease | September 15-August 28, full time | 1,000.00 |
| Emory University School of Medicine, Emory University, Ga.<br>At: University Hospital | Postgraduate Course in Cardiography | October 20-24, full time | 50.00 |
| Chicago Medical Society, 86 E. Randolph St., Chicago, Ill.<br>At: LaSalle Hotel, Chicago | Cardiovascular and Renal Diseases | September 29-October 3, full time | 75.00 [51] |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Personal Course in Cardiovascular Disease | September 17, 10 sessions | 80.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Massachusetts General Hospital | Cardiovascular Disease | October 1-September 30, full time | 800.00 [10] |
| At: Beth Israel Hospital | Cardiology 1 | January 26-May 8, full time | 500.00 [10] |
| At: Boston City Hospital | Cardiology 2 | November 5-January 21, part time | 75.00 [10] |
| At: Peter Bent Brigham Hospital | Clinical Heart Disease | July 1-31, full time | 200.00 [10] |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Clinical Cardiology (Medicine PM 29) | Fall, 8 weeks, part time | 45.00 |
| | Study and Treatment of the Ambulant Adult Cardiac Patient (Medicine PM 29-C) | October 6-November 28, part time | 60.00 |
| | Cardiovascular Diseases (Medicine PM 31) | November 3-11, full time | 75.00 |
| | Bedside Clinics in Heart Diseases (Medicine PM 46) | October 13-December 1, part time | 30.00 |
| | Heart Disease and Circulatory Dynamics (Medicine PM 48) | October 7-December 9, part time | 45.00 |
| At: Montefiore Hospital | Cardiology I (Medicine PM 60) | September 25-June 4, part time | 300.00 |
| | Cardiology II (Medicine PM 62) | September 23-January 27, part time | 150.00 |
| | Cardiology III (Medicine PM 63) | September 23-January 27, part time | 200.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]<br>At: Jewish Sanitarium and Hospital for Chronic Disease | Clinical Ballistocardiography | October, 8 weeks, part time | 20.00 |
| | Advanced Cardiology and Electrocardiography | October, 10 weeks, part time | 20.00 |
| At: Coney Island Hospital | Cardiovascular Disease: Clinical and Electrocardiographic Correlation | | |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 100th St., New York 29, N. Y. | Cardiology | Continuously, except July and August, part time | 150.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Diagnosis and Treatment of Diseases of the Heart | Arranged, 3 weeks | 75.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5427-A Auscultation of the Heart | September 8-10, full time | 50.00 |
| | 5433-A Fluoroscopy of the Heart | September 11-12, full time | 30.00 |
| | 5434-A Congenital Heart Disease | October 6-8, full time | 40.00 |
| | 5435-A Rheumatic Heart Disease | October 27-29, full time | 40.00 |
| | 5436-A Degenerative Heart Disease | January 12-14, full time | 40.00 |
| St. Francis Sanatorium for Cardiac Children, Roslyn, N. Y. | A Course of Seminars on Modern Concepts Regarding the Nature and Treatment of Rheumatic Fever and Rheumatic Heart Disease | October-May, part time | None |
| Cleveland Area Heart Society, 417 Public Square Bldg., Cleveland 13, Ohio<br>At: Western Reserve University | Cardiac Resuscitation Course | September through July, 2 days, full time | 20.00 [4] |
| American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.<br>At: Mt. Sinai Hospital, New York, N. Y. | Recent Trends in the Diagnosis and Treatment of Cardiovascular Disease | September 30-October 4, full time | 30.00 mbrs. 60.00 non-mbrs. |
| At: Emory University School of Medicine | Cardiovascular Diseases | October 20-24, full time | 30.00 mbrs. 60.00 non-mbrs. |
| Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 2, Pa. | Postgraduate Course in Cardiology | September-May, part time | 100.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Cardiology [21] | October, 8 sessions, part time | 80.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: Robert B. Green Memorial Hospital, San Antonio Texas | Diagnosis and Treatment of Cardiovascular Disease | January, 2 days | 15.00 |
| University of Utah College of Medicine, Salt Lake City, Utah | Congenital Heart Disease | October, 2½ days, full time | 25.00 |
| University of Washington School of Medicine, Seattle, Wash. | Recent Advances in Cardiology | June 16-17, full time | 20.00 |
| **DERMATOLOGY AND SYPHILOLOGY** | | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Dermatology | January 7-March 25, part time | 40.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 12 Month Clinical Course in Dermatology | By appointment, full time | 1,000.00 |
| | Intensive 2 Week Course in Dermatology | October 13, full time | 100.00 |
| | Clinical Refresher Course in Dermatology | Every Monday, 2 or more weeks, full time | 75.00 2 weeks |
| | Personal Course in Dermatology | September 18, 10 sessions | 100.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Massachusetts General Hospital | Dermatology and Syphilology | October 1-September 30, full time | 800.00 [10] |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.<br>At: Boston Dispensary | Dermatology I | November 3-7, full time | 40.00 [10] |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **DERMATOLOGY AND SYPHILOLOGY—Continued** | | | |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.<br>At: Receiving Hospital | Dermopathology Seminar<br>Dermatopathology | Quarterly, part time<br>September-December, part time | $15.00<br>50.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Deep Mycoses<br>Superficial Mycoses<br>Seminar in Dermatology<br>Dermatology for Specialists | December-March, part time<br>September-December, part time<br>Quarterly, part time<br>November 20-22, full time | 30.00<br>30.00<br>15.00<br>25.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Montefiore Hospital | Common Skin Diseases and Treatment (Dermatology PM 60) | October 6-December 8, part time | 40.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]<br>At: Kings County Hospital | Dermatology for the General Practitioner | October, 8 weeks, part time | 20.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Dermatology and Syphilology for the General Practitioner (Seminar)<br>Dermatology and Syphilology for Specialists (Seminar)<br>Dermatologic Histopathology (Seminar)<br>Training for Specialization in Dermatology and Syphilology | Arranged, 5 days<br>Arranged, 5 days<br>Arranged, 5 days<br>3 years | 75.00<br>75.00<br>75.00<br>1,000.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.<br>At: Skin and Cancer Unit and affiliated Hospitals | 524-A Dermatology and Syphilology in Infants and Children<br>525-A Dermatology and Syphilology (Graduate Course) | September 22-26, full time<br>October 1, 1 year, full time | 75.00<br>700.00 |
| Cleveland Clinic Foundation and Frank E. Bunts Educational Institute, 2020 E. 93d St., Cleveland, Ohio | Dermatology and Syphilology | October 29-30, 1½ days, full time | 15.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia 4, Pa. | Dermatology-Syphilology [23] | September 29-May 23, full time | 900.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: University of Texas Campus, Austin<br>At: Scott and White Memorial Hospitals [38] | Office Dermatology<br>Dermatology and Syphilology | December 1-February 2, 10 sessions<br>Arranged, 2 weeks, full time | 25.00<br>Arranged |
| **DIABETES** | | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Personal Course in Medical and Surgical Diabetes | September 17, 10 sessions | 100.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: New England Deaconess Hospital | Diabetes and Endocrinology in relation to General Medicine | October 6-8, full time | 30.00 [19] |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Diabetics and Nutrition (Medicine PM 38) | November 12-13, full time | 20.00 |
| **DISEASES OF THE CHEST** | | | |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Fitzsimons Army Hospital, Denver, Colo. | Pulmonary Diseases [40,41,42,43] | September 22-26, full time | None |
| American College of Chest Physicians, 112 East Chestnut St., Chicago 11, Ill.<br>At: Hotel New Yorker, New York City | Postgraduate Course in Diseases of the Chest | November 10-15, full time | 50.00 |
| At: St. Clair Hotel, Chicago, Ill. | Postgraduate Course in Diseases of the Chest | October 6-10, full time | 50.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Pathology of Tuberculosis | September-December, part time | 50.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Diseases of the Chest for General Physicians | October 16-18, full time | 25.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Diseases of the Chest (Medicine PM 37) | November 17-18, full time | 20.00 |
| At: Bellevue Hospital | Diseases of the Chest (Medicine PM 80) | October 1, 1 or more months, full time | 50.00 per month |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37]<br>At: Beth El Hospital | Diseases of the Chest | October, 6 weeks, part time | 40.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y.<br>At: Municipal Sanatorium, Otisville, N. Y. | Diseases of the Chest<br>Pulmonary Tuberculosis | October and November, 2 months, part time<br>Arranged, 3 weeks, full time | 100.00<br>175.00 |
| **ELECTROCARDIOGRAPHY** | | | |
| University of California, University Extension School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif. | Electrocardiography | November 3-20, part time | 20.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Fitzsimons Army Hospital and University of Colorado School of Medicine, Denver | Clinical Electrocardiography and Postgraduate Conference on Heart Disease [40,41,42,43] | November 10-15, full time | None |
| Mt. Sinai Hospital of Greater Miami, 4300 Alton Rd., Miami Beach, Fla. | Interpretation of the Electrocardiogram<br>Introduction to Clinical Electrocardiography | October 6-December 10, 1952, part time<br>September 29-December 19, part time | 30.00<br>25.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 2 Week Intensive Course in Electrocardiography and Heart Disease<br>Personal Course in Electrocardiography and Heart Disease | July 14 and September 29, full time<br>October 20, 10 sessions | 150.00<br>125.00 |
| Michael Reese Hospital Postgraduate School, 29th and Ellis Ave., Chicago 16, Ill. | Electrocardiography | August 16-20, full time | Not given |
| Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La. | Electrocardiography | December 1-13, full time | 100.00 |
| Beth Israel Hospital, Boston, Mass. | Practical Electrocardiography<br>Practical Electrocardiography | November 3-7, full time<br>November, 10 weeks, part time | 75.00<br>75.00 |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. | Electrocardiography I<br>Electrocardiography II | December 1-5, full time<br>January 12-14, full time | 40.00 [19]<br>25.00 [19] |
| University of Michigan, Department of Postgraduate Medicine, Ann Arbor, Mich. | Electrocardiographic Diagnosis | August 25-30, full time | 75.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Electrocardiography | September-June, part time | 45.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **ELECTROCARDIOGRAPHY—Continued** | | | |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Mt. Sinai Hospital | Intensive Course in Elementary Electrocardiography (Medicine PM 41) | October 20-25 | $60.00 |
| | | January 5-10, full time | 60.00 |
| | Intensive Course in Advanced Electrocardiography | October 27-November 1 | 60.00 |
| | | January 12-17, full time | 60.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] | | | |
| At: Beth El Hospital | Basic Electrocardiography | October, 6 weeks, part time | 20.00 |
| At: Jewish Hospital | Electrocardiography for the General Practitioner | October, 6 weeks, part time | 30.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y. | Electrocardiography | Fall, 2 weeks, part time | 100.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Electrocardiographic Interpretation | Arranged, 2 weeks | 75.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5423-A Electrocardiography | November 17-21, full time | 75.00 |
| American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. | | | |
| At: Wayne University College of Medicine, Detroit, Mich. | Electrocardiography | Fall, 5½ days, full time | 30.00 mbrs.<br>60.00 non-mbrs. |
| University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas | | | |
| At: Scott and White Memorial Hospitals | Electrocardiography | Arranged, 2 weeks, full time | Arranged |
| University of Vermont, College of Medicine, College Park, Burlington, Vt. | | | |
| At: Bishop DeGoesbriand Hospital | Electrocardiography | Arranged, 20 hours per semester | 5.00 |
| **ELECTROENCEPHALOGRAPHY** | | | |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 642-A Electroencephalography | Arranged, 8 weeks, part time | 300.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Electroencephalography | Arranged, 2 weeks, full or part time [29] | 200.00 |
| **ENDOCRINOLOGY** | | | |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Massachusetts General Hospital | Pediatric Endocrinology and Related Metabolic Disturbances | October 6-11, full time | 75.00 [10] |
| At: New England Deaconess Hospital | Diabetes and Endocrinology in Relation to General Medicine | October 6-8, full time | 30.00 [10] |
| Wayne University College of Medicine, 1552 St. Antoine St., Detroit 26, Mich. | Endocrinology | September-March, part time | 30.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Endocrinology (Including Diabetes, Corticotropin and Cortisone) for General Physicians | December 1-6, full time | 25.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Mt. Sinai Hospital | Endocrinological Diseases (Medicine PM 39) | December 3-5, full time | 30.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] | | | |
| At: Maimonides Hospital | Metabolic Endocrinology | October, 10 weeks, part time | 20.00 |
| At: Jewish Hospital | Gynecologic Endocrinology | October, 10 weeks, part time | 20.00 |
| At: Jewish Sanitarium and Hospital for Chronic Disease | Medical and Gynecologic Endocrinology | October, 4 weeks, part time | 20.00 |
| New York Academy of Medicine, 2 E. 103d St., New York 29, N. Y. | Hormones in Health and Disease | October 6-17, full time | 10.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y. | Endocrinology | Fall, 2 weeks, part time | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5422-A Endocrinology | July 21-25 and November 10-14, full time | 50.00 |
| The Endocrine Society, 1200 N. Walker, Oklahoma City, Okla. | | | |
| At: Roney Plaza Hotel, Miami Beach, Fla. | Fifth Postgraduate Assembly in Endocrinology and Metabolism [5] | November 3-8, full time | 75.00 |
| **ENDOSCOPY** | | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 1 Week Course in Bronchoscopy | By appointment, full time | 100.00 |
| | 10 Day Practical Course in Cystoscopy | July 7, 21; August 4, 18; September 22; October 6, 20; November 3; December 1, full time | 150.00 |
| | Clinical Bronchoscopy | September 24, 8 sessions | 150.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Massachusetts General Hospital | Endoscopy | Arranged, 3 or more months, full time | 375.00 [10] for 3 months<br>125.00 each additional month |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Columbia Presbyterian Medical Center | Bronchoscopy (Otolaryngology PM 1) | October 6-24, full time | 250.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] | | | |
| At: Jewish Hospital | Gastroscopy | October, 5 weeks, part time | 20.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y. | Gastroscopy—Advanced | Arranged, 3 weeks, part time | 200.00 |
| | Gastroscopy | Arranged, 2 weeks, part time | 200.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Bronchoscopy | Arranged, 4 weeks | 150.00 |
| Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40, Pa. | Bronchoesophagology | Fall, September 22-October 3, 2 weeks, full time | 250.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | | | |
| At: Graduate, University, Pennsylvania and Philadelphia General Hospitals | Bronchoesophagology, Gastroscopy and Laryngeal Surgery | First 2 weeks of September, full time | 250.00 |
| **FORENSIC MEDICINE** | | | |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 531-A Forensic Medicine (Graduate Course) | September 29, 1 year, full time | 700.00 |
| | 532-A Forensic Medicine | Arranged, full time | 100.00 per month |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **FRACTURES** | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Intensive 2 Week Course in Fractures and Traumatic Surgery | October 6, full time | $125.00 |
| | Clinical Course in Fractures | 1st of every week, 1 or 2 weeks, full time | 50.00<br>1 week |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Massachusetts General Hospital | Special Course in Fractures | September 24, 10 sessions | 125.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Treatment of Fractures and Other Traumatic Conditions | September 29-October 4, full time | 150.00 [10] |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Fractures and Traumatic Surgery for General Physicians | November 13-15, full time | 25.00 |
| | Fractures and Allied Trauma | Fall, 4 weeks, full time | 200.00 |
| | **GASTROENTEROLOGY** | | |
| Chicago Medical Society, 86 E. Randolph St., Chicago, Ill.<br>At: LaSalle Hotel, Chicago, Ill. | Diseases of the Gastrointestinal Tract, Liver and Pancreas | October 6-10, full time | 75.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 2 Week Personal Course in Gastroscopy and Gastroenterology | September 15, November 3, full time | 200.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.<br>At: Receiving Hospital | 2 Week Course in Gastroenterology | October 27, full time | 100.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Montefiore Hospital<br>At: Mt. Sinai Hospital | Gastroenterology | Quarterly, part time | 15.00 |
| | Gastroenterology (Medicine PM 70) | September 16-December 30, part time | 75.00 |
| | Gastrointestinal Diseases (Medicine PM 32) | November 24-28, full time | 50.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford St., Brooklyn 16, N. Y. [87]<br>At: Greenpoint Hospital | Gastroenterology | October, 8 weeks, part time | 30.00 |
| National Gastroenterological Association, Dept. GSJ, 1819 Broadway, New York 23, N. Y.<br>At: Hotel Statler, N. Y. | Fourth Annual Course in Postgraduate Gastroenterology | October 23-25, full time | Not given |
| | Gastroenterology | Fall, 1 month, part time | 100.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Clinical Gastroenterology | Arranged, 6 weeks | 75.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | 5421-A Gastroenterology | October 13-17, full time | 45.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | | | |
| American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.<br>At: University of Pennsylvania Graduate School of Medicine, Philadelphia, Pa. | Gastroenterology | Fall, 5½ days, full time | 30.00<br>mbrs.<br>60.00<br>non-mbrs. |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia 4, Pa. | Gastroenterology [23] | September 29-May 23, full time | 960.00 |
| Meharry Medical College, Nashville, Tenn. | Gastroenterology | November 10-14, full time | 30.00 |
| | **GERIATRICS** | | |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Geriatrics (Medicine PM 47) | September 25-January 29, part time | 65.00 |
| University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla. | Postgraduate Course in Geriatrics | January 8-9, full time | 10.00 |
| | **HEMATOLOGY** | | |
| University of California, University Extension, School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif.<br>At: Veterans Administration Hospital, Los Angeles | Hematology for General Practitioners | October 1-November 5, part time | 30.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 1 Week Personal Course in Hematology | June 16, full time | 100.00 |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.<br>At: Pratt Diagnostic Clinic | Hematology I | December 8-12, full time | 40.00 [10] |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Beginning Hematology | September-December, part time | 50.00 |
| | Advanced Hematology | December-March, part time | 50.00 |
| | Review of Clinical Hematology | September-December and December-March, part time | Not given |
| At: Receiving Hospital | Hematology Clinic | September-December and December-March, part time | 15.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | Clinical Hematology (Medicine PM 66) | September 16-January 20, part time | 75.00 |
| At: Montefiore Hospital | Advanced Hematology (Medicine PM 67) | September 23-January 6, part time | 75.00 |
| At: Mt. Sinai Hospital | Hematology (Medicine PM 35) | November 19-22, full time | 30.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Hematology | Arranged, 2 months, part time | 50.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 546-A Clinical Hematology | October 6-December 8, part time | 40.00 |
| University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore. | Diseases of the Blood and Blood Forming Organs | December 1-3, full time | 30.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa.<br>At: Bryn Mawr Hospital | Clinical and Laboratory Hematology | First of October, December, 6 weeks, full time | 200.00 |
| | **HISTOLOGY** | | |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Advanced Histology | December-March, part time | Not given |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Histology | Arranged, 5 weeks, full time | 300.00 |
| | **INDUSTRIAL MEDICINE** | | |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 481-A Industrial Medicine (Graduate Course) | September 29, 1 year, full time | 700.00 |
| | 484-A Medical Aspects of Compensation | December 8-13, full time | 50.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **INTERNAL MEDICINE** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Basic Science Course in Internal Medicine | September 29-June 5, full time | $800.00 |
| | Differential Diagnosis of Internal Diseases | January 6-March 24, part time | 50.00 |
| Mercy Hospital, Hillcrest Drive, San Diego, Calif. | Internal Medicine | Annually, 40 hours a year | None |
| University of Southern California, 1200 N. State St., Los Angeles 33, Calif. | | | |
| At: Los Angeles County Hospital | Internal Medicine (Intensive Review for American Board Examinations) | September 15-26, part time | 50.00 |
| | Internal Medicine | September 15-June 1, full time | 750.00 |
| University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo. | Diagnosis in Internal Medicine with Emphasis on Physical Diagnosis | Arranged, 6 days, full time | 55.00 [10] |
| Georgetown University School of Medicine, 3900 Reservoir Rd., N. W. Washington 7, D. C. | Internal Medicine | October, 16 sessions, part time | 50.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C. | | | |
| At: Letterman Army Hospital, San Francisco, Calif. | Current Trends in Internal Medicine [40,43,43] | October 20-24, full time | Not given |
| At: Walter Reed Army Hospital, Washington 12, D. C. | Internal Medicine [40,41,42] | November 3-8, full time | None |
| Emory University School of Medicine, Emory University, Ga. | | | |
| At: Grady Memorial Hospital, Atlanta, Ga. | General Internal Medicine | Arranged, 2 weeks to 12 months | Arranged [52] |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 2 Week Intensive Course in Internal Medicine | October 13, full time | 75.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Boston City Hospital | Internal Medicine 1 | September 2-August 29, full time | 600.00 [10] |
| | Internal Medicine 2 | September 2-November 29, full time | 375.00 [10] |
| | Medical Diagnosis and Treatment | October 1-May 29, part time | 100.00 [10] |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. | | | |
| At: Pratt Diagnostic Clinic | Review of Recent Advances in Internal Medicine | October 6-11, full time | 50.00 [10] |
| University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich. | | | |
| At: University Hospital | Clinical Internal Medicine | October-April, part time | 65.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | | | |
| At: Receiving Hospital | Medical Conference | Quarterly, part time | 15.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Montefiore Hospital | Peripheral Vascular Diseases (Medicine PM 65) | September 23-January 6, part time | 75.00 |
| At: Mt. Sinai Hospital | Symposium on Internal Medicine (Medicine PM 30) | November 3-December 6, full time | 200.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y. [37] | | | |
| At: Jewish Hospital and Jewish Sanitarium and Hospital for Chronic Diseases | Internal Medicine | October, 8 weeks, part time | 40.00 |
| At: Kings County Hospital | Recent Advances in Internal Medicine | October, 12 weeks, part time | 30.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Internal Medicine | Monthly, except July and August, 1 or 2 months, full time | 150.00 1 month |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5418-A Peripheral Vascular Diseases | November 17-21, full time | 50.00 |
| At: Bellevue, University and Willard Parker Hospitals | 5429-A Internal Medicine (Graduate Course) | September 29, 1 year, full time | 700.00 |
| University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla. | Lectures in Internal Medicine | November 5, 12 weeks, part time | 25.00 |
| American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. | | | |
| At: Cornell University Medical College and the New York Hospital | Internal Medicine | Fall, 5½ days, full time | 30.00 mbrs. 60.00 non-mbrs. |
| At: Presbyterian Hospital and University of Illinois College of Medicine | Internal Medicine | November 17-22, full time | 30.00 mbrs. 60.00 non-mbrs. |
| At: University of Pittsburgh School of Medicine | Internal Medicine: Selected Subjects | October 6-11, full time | 30.00 mbrs. 60.00 non-mbrs. |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Internal Medicine [23] | September 29-May 23, full time | 960.00 |
| Tennessee State Medical Association, Post-graduate Committee, 4 S. Dunlap, Memphis 3, Tenn. | | | |
| At: 50 Teaching Centers in State | Internal Medicine and the Circulatory Diseases | Continuously, 10 weeks in each center | 30.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas | | | |
| At: Shannon West Texas Memorial Hospital | Internal Medicine of General Practice | Fall and winter, 12 sessions | 25.00 |
| At: M. D. Anderson Hospital, Houston, Texas | Current Drug Practice | September 9-December 16, 15 sessions | 25.00 |
| University of Vermont College of Medicine, College Park, Burlington, Vt. | | | |
| At: Mary Fletcher Hospital | Internal Medicine | Arranged | None |
| | Internal Medicine | Arranged, 1 to 3 months | None |
| | **MALIGNANT DISEASE** | | |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C. | | | |
| At: Walter Reed Army Hospital, Washington 12, D. C. | Exfoliative Cytology and Cancer Detection [40,43,42,43] | September 22-26, full time | None |
| Dade County Cancer Institute and Dade County Medical Association, 1155 N. W. 14th St., Miami, Fla. | Exfoliative Cytology in Cancer for M.D.'s | Continuously, 6-12 months, full time | 150.00 [48] |
| | Exfoliative Cytology in Cancer | June-December, 1-3 months, full time | 150.00 [49] |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Columbia-Presbyterian Medical Center | Cancer Diagnosis and Treatment (Cancer PM 1) | November 17-29, full time | 100.00 |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and or Tuition |
|---|---|---|---|
| **MALIGNANT DISEASE—Continued** | | | |
| Cornell University Medical College, 1300 York Ave., New York 21, N. Y. | Exfoliative Cytology (Cancer Detection) | Continuously, except July and August, 2 weeks to 1 year | Variable |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Newer Concepts of the Physiology and Biochemistry of Cancer | Arranged, 6 weeks, part time | $150.00 |
| University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore. | Diagnosis and Treatment of Malignant Growths | September 15-19, full time | 25.00 |
| Medical College of South Carolina, 16 Lucas St., Charleston, S. C. | Refresher Course in Cancer [22] | November, 1½ days | None |
| **MEDICINE, GENERAL** | | | |
| Alabama Academy of General Practice, Montgomery, Ala.<br>At: Medical College of Alabama, Birmingham | Postgraduate Seminar | August, 2 days | None |
| Medical College of Alabama, 620 S. 20th St., Birmingham, Ala.<br>At: Selma, Ala.<br>At: Winfield, Ala. | Postgraduate Seminars | August, January, 2 days, full time | None |
| | Black Belt Postgraduate Seminar | Quarterly, part time | None |
| | Marion County Medical Association | Quarterly, part time | None |
| California Academy of General Practice, 450 Mission St., San Francisco, Calif.<br>At: Hotel Statler, Los Angeles | 1952 Scientific Assembly | November 9-12, full time | 5.00 |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Differential Diagnosis of Nervous Diseases | September 18-November 6, part time | 40.00 |
| | General Medicine | September 30-December 16, part time | 50.00 |
| | Diseases of the Kidneys | November 11-December 16, part time | 25.00 |
| Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles 5, Calif.<br>At: San Fernando Branch and East Los Angeles Branch | Practical Medicine Lecture Series | Continuously, part time, 1½ hours a week | None |
| California Medical Association, 450 Sutter St., San Francisco, Calif.<br>At: Santa Barbara | Regional Medical and Surgical Institute | October, 2 days | 5.00 |
| At: Fresno | Regional Medical and Surgical Institute | November, 2 days | 5.00 |
| San Joaquin County Medical Society, 2633 Pacific Ave., Stockton, Calif.<br>At: Stockton, Calif. | Stockton Postgraduate Study Club | September-December, 8 sessions | 10.00 |
| Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15, Calif. | Postgraduate Medical Courses for Practicing Physicians | September 15-19, full time | 75.00 [6] |
| University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22, Calif.<br>At: East Oakland Hospital, Oakland, Calif.<br>At: Mills Memorial Hospital, San Mateo, Calif. | Medicine for General Practitioners | September-December, part time | Not given |
| | Evening Lectures in Medicine | September-December, part time | Not given |
| San Diego County General Hospital, North End Front St., San Diego 3, Calif. | Annual Postgraduate Assembly | September 17-18 | None |
| St. John's Hospital, 22d at Santa Monica Blvd., Santa Monica, Calif. | Annual Postgraduate Assembly | September 8-10, full time | 10.00 |
| University of California, University Extension, School of Medicine, 10845 Le Conte Ave., Los Angeles 24, Calif.<br>At: Veterans Administration Hospital, Los Angeles | Medicine for General Practitioners | September 24-December 17, part time | 50.00 |
| | Three-Day Symposium (Cardiovascular Diseases, Ear, Nose and Throat, Proctology) | August 13-15, full time | 50.00 |
| Connecticut State Medical Society, New Haven, Conn.[7]<br>At: Yale School of Medicine | Connecticut Clinical Congress | 3d week in September, 3 days | 3.00 and 5.00 |
| Emory University School of Medicine, Emory University, Ga.<br>At: Grady Memorial Hospital, Atlanta, Ga. | Postgraduate Course for General Practitioners (Obstetrics, Pediatrics, General Medicine and Surgery) | October 6-10, full time | 10.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Intensive Personal Course in Liver and Biliary Tract Diseases | September 22, 1 week, full time | 100.00 |
| | Personal Course in Medical Emergencies, Diagnosis and Treatment | September 24, 10 sessions | 80.00 |
| | Personal Course in General Medicine | September 24, 10 sessions | 100.00 |
| Illinois Academy of General Practice, 7107 S. Jeffrey Ave., Chicago 49, Ill.[8]<br>At: Chicago, Rockford, Joliet, Peoria, Bloomington, Danville, Alton, Belleville and Herrin | Postgraduate Course (Medicine for Today) | October-November, part time | 35.00 for mbrs. 75.00 non-mbrs. |
| Northwestern University Medical School, 303 E. Chicago Ave., Chicago, Ill. | Postgraduate Course (with A. A. G. P.) | Annually, 20 weeks, part time | Not given |
| Illinois State Medical Society, 30 N. Michigan Ave., Chicago 2, Ill.<br>At: Various Centers in State | Postgraduate Conference | Variable times throughout the year | None |
| Indiana State Medical Association, 23 E. Ohio St., Indianapolis, Ind. | Telephone Seminars | 1st Tuesday night of each month | 50c per society mbr. per hour |
| Maryland Academy of General Practice, 25 Alder St., Oakland, Md.<br>At: Baltimore, Md.<br>At: Various Cities in Maryland | Annual Scientific Assembly | October, 1 day | Not given |
| | One Day Postgraduate Seminars | Every 4 months | Not given |
| Boston University School of Medicine, 80 E. Concord St., Boston, Mass.<br>At: Evans Memorial, Massachusetts Memorial Hospitals | Postgraduate Course in Medicine | October 22-April 29, part time | 100.00 |
| Massachusetts Medical Society, 22 Fenway, Boston 15, Mass.<br>At: Hotel Statler, Boston, Mass. | New England Postgraduate Assembly | October 28-30 | Not given |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.<br>At: Pratt Diagnostic Clinic | Rheumatic Diseases | December 15-19, part time | 30.00 [10] |
| University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich.<br>At: Alpena, Battle Creek, Bay City, Flint, Jackson, Lansing, Midland, Mt. Clemens, Muskegon, Traverse City, Escanaba, Houghton, Iron Mountain, Ironwood, Marquette, Menominee, Sault Ste. Marie | Michigan Program for Graduates in Medicine: Extramural Course | 1 day in each center in October and November | None |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **MEDICINE, GENERAL—Continued** | | | |
| Kansas City Southwest Clinical Society, 630 Shukert Bldg., Kansas City 6, Mo.<br>At: Municipal Auditorium, Kansas City, Mo. | Annual Fall Clinical Conference | October 6-9, full time | $20.00 |
| Omaha Mid-West Clinical Society, 1631 Medical Arts Bldg., Omaha 2, Neb.<br>At: Hotel Paxton | Annual Postgraduate Clinical Assembly | October 27-31, full time | 5.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Metabolic Diseases of Bone and Cartilage (Medicine PM 26) | September 27-December 13, part time | 50.00 |
| | ACTH and Cortisone (Medicine PM 27) | December 9-23, part time | 20.00 |
| | Diseases of the Liver (Medicine PM 33) | November 29-December 6, part time | 20.00 |
| | Diseases of the Kidneys (Medicine PM 34) | December 1-2, full time | 20.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[47]<br>At: Jewish Hospital | Hypertension and Nephritis | October, 8 weeks, part time | 20.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Peripheral Vascular Disease | Arranged, part time, 2 months | 200.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | General Medicine | Arranged, 4 weeks | 100.00 |
| | General Practitioner's Course | Arranged, 4 weeks | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 5424-A Nephritis and Hypertension | July 14-18, full time | 50.00 |
| | 5430-A Review Course in General Medicine | July 14-25, full time | 100.00 |
| | 740-A Comprehensive Medicine for Foreign Physicians | September 29-June 19, full time | Not given |
| University of Buffalo School of Medicine, 24 High St., Buffalo 3, N. Y. | Postgraduate Course for Practitioners | September 15-20, full time | 35.00 |
| University of North Carolina School of Medicine and Extension Division, Chapel Hill, N. C.<br>At: Morganton, North Wilkesboro and Elkin | Medical Postgraduate Extension Course | October-November, part time, 6 to 8 weeks | 20.00 to 30.00 |
| Southwestern Ohio Society of General Physicians, Cincinnati, Ohio<br>At: University of Cincinnati | Postgraduate Course | October, 8 sessions, part time | 10.00 [24] |
| Hillcrest Memorial Hospital, 1653 E. 12th St., Tulsa, Okla. | Postgraduate Study Course [53] | July-January (Lecture Series) | None |
| Oklahoma City Clinical Society, 512 Medical Arts Bldg., Oklahoma City, Okla.<br>At: Biltmore Hotel, Oklahoma City | Annual Conference | Fall, 4 days, full time | 20.00 |
| American College of Physicians, 4200 Pine St., Philadelphia 4, Pa.<br>At: Massachusetts General Hospital | Rheumatic Diseases | Fall, 5½ days, full time | 30.00 mbrs. 60.00 non-mbrs. |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Current Advances in Medicine and Surgery | September 22-26, full time | 75.00 [27] |
| Medical College of South Carolina, Charleston, S. C. | Postgraduate Seminar | November 4-6, full time | Not given |
| University of South Dakota School of Medical Sciences, Vermillion, S. D. | Postgraduate Medical Course | September-June, or arranged | 75.00 |
| Nashville Academy of Medicine, 647 Doctors Bldg., Nashville, Tenn.<br>At: Hermitage Hotel, Nashville | Nashville Medical Assembly | October 29-31, full time | Not given |
| Postgraduate Medical Assembly of South Texas, 229 Medical Arts Bldg., Houston, Texas<br>At: Shamrock Hotel, Houston | Scientific Meetings | July 21-23, full time | 20.00 |
| University of Vermont College of Medicine, College Park, Burlington, Vt. | Postgraduate Course for General Practitioners | 1st week in September, full time | 25.00 [19] |
| Washington Academy of General Practice, 504 Security Bldg., Olympia, Wash.<br>At: Hotel Cascadian, Wenatchee, Wash. | Scientific Assembly | October 31-November 1, full time | None |
| Interstate Postgraduate Medical Association, 16 N. Carroll St., Madison 3, Wis.<br>At: Municipal Auditorium, Cleveland, Ohio | International Medical Assembly Annual Refresher Postgraduate Course | November 10-13, full time | 5.00 |
| **NEUROLOGY AND PSYCHIATRY** | | | |
| Los Angeles Institute for Psychoanalysis, 407 Commercial Center St., Beverly Hills, Calif. | Professional Training in Psychoanalysis [28] | July-January, arranged, part time | 232.00 |
| University of California School of Medicine, Medical Extension, San Francisco 22, Calif.<br>At: The Langley Porter Clinic | Psychiatry and Neurology | August to October, full time | 200.00 |
| University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo. | Neurological and Neurosurgical Seminar | August 21-23, full time | 25.00 [19] |
| Joint Committee of State Mental Hospitals, 65 Wethersfield Ave., Hartford, Conn.[7]<br>At: Yale University School of Medicine and Connecticut State Hospital | Connecticut Postgraduate Seminar in Psychiatry and Neurology | October 1-December 12, January 5-May 7, part time | None |
| Catholic University of America, Washington 17, D. C. | Principles of Psychotherapy | October 1-January 31, part time | 30.00 [19] |
| | Seminar in Psychotherapy II | October 1-January 31, part time | 30.00 [19] |
| | Introduction to Psychiatry | October 1-January 31, part time | 30.00 [19] |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Fitzsimons Army Hospital, Denver 8, Colo. | Psychotherapeutic Medicine [40, 41, 43] | August 25-September 6, full time | Not given |
| At: Letterman Army Hospital, San Francisco, Calif. | Psychotherapeutic Medicine [40, 41, 43] | August 25-September 6, full time | None |
| At: Walter Reed Army Hospital, Washington 12, D. C. | Psychotherapeutic Medicine [40, 41, 43] | August 25-September 6, full time | None |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Personal Course in Clinical Neurology | October 1, 10 sessions | 100.00 |
| | Personal Course in Neuropathology | By appointment, part time | 20.00 per hour |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **NEUROLOGY AND PSYCHIATRY—Continued** | | | |
| Institute for Psychoanalysis, 664 N. Michigan Ave., Chicago, Ill. | | | |
| At: Illinois Neuropsychiatric Institute | Psychosomatic Demonstrations | October-July, part time | None |
| Massachusetts Department of Mental Health, Waltham, Mass. | | | |
| At: Metropolitan State Hospital | Review Course in Basic Neurology and Psychiatry | October 5-December 7, part time | None |
| American Institute for Psychoanalysis, 220 W. 98th St., New York 25, N. Y. | Clinical Conferences on Case Histories [35] | September 9, 15 weeks, part time | 330.00 |
| | The Psychoanalytic Process [36] | September 9, 15 weeks, part time | 45.00 |
| | Psychoanalytic Therapy [36] | September 15, 20 weeks, part time | 60.00 |
| | Continuous Case Seminar [36] | September 12, 10 weeks, part time | 30.00 |
| | Clinical Conferences [36] | November 21, 10 weeks, part time | 30.00 |
| | Psychoanalysis of Children | September 12, 10 weeks, part time | 20.00 |
| | The Neurotic Patient in General Practice | September 9, 5 weeks, part time | 10.00 |
| | Readings in Psychoanalysis, Part III | September 11, 15 weeks, part time | 30.00 |
| At: New School for Social Research | Neuroses and Psychoses | September 30, 15 weeks, part time | 21.00 |
| | Literary Figures in the Light of Modern Psychoanalysis | September 25, 15 weeks, part time | 21.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | Clinical Electroencephalography and Electromyography (Neurology PM 2) | October 1 and January 2, 3 months, full time | 150.00 |
| At: Columbia Presbyterian Medical Center | Symposium on Neurology and Psychiatry (Psychiatry PM 1) | October 6-December 12, full time | 250.00 |
| At: Mt. Sinai Hospital | Practical Neuroanatomy and Neuropathology (Neurology PM 31) | October 6-May 11, part time | 140.00 |
| | Advanced Practical Neuroanatomy and Neuropathology (Neurology PM 32) | October 2-June 3, part time | 100.00 |
| | Clinical Electroencephalography (Neurology PM 33) | October 2-January 15, part time | 60.00 |
| | Techniques of Psychotherapy (Psychiatry PM 31) | October 13-February 23, part time | 100.00 |
| At: Montefiore Hospital | Neurology PM 60 | November 10-December 6, part time | 150.00 |
| | Neurology PM 62 | September 17-December 10, part time | 150.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y. [37] | | | |
| At: Jewish Sanitarium and Hospital for Chronic Diseases | Clinical Neurology | October, 8 weeks, part time | 20.00 |
| At: Jewish Hospital | Child Psychiatry | October, 10 weeks, part time | 20.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y. | Readings in Psychoanalytic Literature | Fall, part time | 40.00 |
| | Introductory Lecture in Child Psychiatry | Fall, part time | 30.00 |
| | Seminar on Psychosomatic Medicine | Fall, part time | 40.00 |
| | Introduction to Psychoanalysis | Fall, part time | 30.00 |
| | Comprehensive Course in Psychoanalysis | September, 9 months, part time | 500.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 641-A Psychiatric and Neurologic Problems in General Practice | January 5-24, part time | 100.00 |
| | 643-A Treatment Methods in Psychiatry | January 12-March 7, part time | 250.00 |
| | 644-A Neuroanatomy and Neurophysiology | January 5-March 14, part time | 200.00 |
| | 646-A Psychiatry in the Practice of Medicine and Pediatrics | Arranged, 3 months, full time | 300.00 |
| | 647-A Psychiatry and Neurology | September 22-December 13, full time | 300.00 |
| | 648-A Psychology and Psychodynamics | Arranged, 3 months, part time | 200.00 |
| At: Bellevue, University and Goldwater Memorial Hospitals | 645-A Neurology (Graduate Course) | September 29, 9 months, full time | 700.00 |
| | 649-A Psychiatry | September 29, 9 months, full time | 700.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Clinicobiologic Neurology-Psychiatry | September 29-December 6, full time | 300.00 |
| | Neurology-Psychiatry [23] | September 29-May 23, full time | 900.00 |
| University of Utah College of Medicine, Salt Lake City, Utah | Clinical Neurology | October, 5 days, full time | 50.00 |
| University of Washington School of Medicine, Seattle, Wash. | Practical Psychiatry | July 21-25, full time | 50.00 |
| **NUCLEAR SCIENCE** | | | |
| Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn. | Radioisotope Techniques Course | July, August and January, 4 weeks | 25.00 |
| **NUTRITION** | | | |
| New York Medical College, Flower and Fifth Ave. Hospitals, 29 E. 106th St., New York 29, N. Y. | Nutrition | Arranged, 1 month, part time | 150.00 |
| **OBSTETRICS AND GYNECOLOGY** | | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Genito-Urinary Diseases | November 24-28, full time | 60.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Personal Course in Vaginal Approach to Pelvic Surgery | September 22 and November 3, full time, 1 week | 100.00 |
| | 2 Week Intensive Course in Gynecology | September 8 and October 20, full time | 150.00 |
| | 2 Week Intensive Course in Obstetrics | September 29 and November 3, full time | 150.00 |
| | Personal Course in Gynecologic Surgery | September 25, November 6 and January 8, 4 sessions | 100.00 |
| | Personal Course in Office Gynecology | September 24, November 5 and January 7, 4 sessions | 100.00 |
| | Personal Course in General and Office Obstetrics | July 16, October 8, 4 sessions | 100.00 |
| | Personal Course in Surgical Obstetrics | September 3, November 19 and January 7, 4 sessions | 100.00 |
| State University of Iowa College of Medicine, Iowa City, Iowa | | | |
| At: University Hospital | Obstetrics and Gynecology Conference | November, 1 day | 5.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **OBSTETRICS AND GYNECOLOGY—Continued** | | | |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 16, Mass. | | | |
| At: Boston Lying-in Hospital | Clinical Obstetrics | September and October, 1 or 2 months, full time | $150.00 [19] a month |
| At: Free Hospital for Women | Gynecology 2 | July, August and September, 1 month, full time | 150.00 [19] a month |
| | Pathology of Obstetrics and Gynecology | January 8-May 14, part time | 150.00 [19] |
| At: Massachusetts General Hospital | Gynecology 3 | September 8-20, full time | 150.00 [19] |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | | | |
| At: H. Kiefer Hospital | Obstetrics (Limit 10) | Quarterly, part time | 50.00 |
| University of Minnesota Center for Continuation Study, Minneapolis 14, Minn. | Gynecology for Specialists | November 3-5, full time | 25.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Margaret Hague Maternity Hospital | Internship Training (Obstetrics PM) | First of each month, 3 months, full time | 350.00 |
| | Observation Course (Obstetrics PM 81) | First of each month, 1 month, full time | 100.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] | | | |
| At: St. John's Episcopal Hospital | Office Gynecology | October, 8 weeks, part time | 20.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Obstetrics and Gynecology including Manikin Obstetrics and Operative Gynecology (Cadaver) | October, 2 months, full time | 250.00 |
| | Manikin Obstetrics | Arranged, 4 weeks, part time | 150.00 |
| | Clinical Course in Office and General Obstetrics | Arranged, 4 weeks, part time | 100.00 |
| | Clinical and Operative Gynecology (Cadaver) | Arranged, 6 weeks, part time | 175.00 |
| | Clinical Gynecology | Arranged, 6 weeks, part time | 75.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 560-A Gynecological Malignancy | October 13-24, full time | 150.00 |
| | 561-A Seminar in Gynecology | October 6-November 1, full time | 150.00 |
| | 562-A Gynecology: Diagnosis and Office Treatment | October 27-November 17, part time | 50.00 |
| | 563-A Gynecology: Diagnosis and Office Treatment | September 15-October 17, part time | 75.00 |
| | 564-A Infertility | December 8-10, full time | 40.00 |
| | 566-A Cystoscopy and Endoscopy | September 15-October 17, part time | 75.00 |
| | 567-A Gynecological Endocrinology | October 7-December 6, part time | 125.00 |
| | 568-A Vaginal Cytology [29] | October 7-December 4, part time | 100.00 |
| | 569-A Surgical Anatomy as Applied to Gynecology: Cadaver [29] | October 14-November 11, part time | 175.00 |
| At: Beth Israel Hospital | 734-A Gynecology [29] | September 2-December 19, part time | Not given |
| Southern Pediatric Seminar, Saluda, N. C. | Obstetrics and Gynecology | July 28-August 2, full time | 25.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Gynecology-Obstetrics [23] | September 29-May 23, full time | 960.00 |
| Meharry Medical College, Nashville, Tenn. | Gynecology and Prenatal Care | November 10-14, full time | 30.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas | | | |
| At: St. Joseph's Infirmary (Classroom) | Obstetrics | September 4-December 11, part time | 25.00 |
| At: Robert B. Green Memorial Hospital, San Antonio | Practical Gynecology | October, 2 days | 15.00 |
| At: Scott and White Memorial Hospitals [38] | Obstetrics | August, 4 weeks, full time | Arranged |
| University of Washington School of Medicine, Seattle, Wash. | Obstetrics | July 7-11, full time | 50.00 |
| **ONCOLOGY** | | | |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Montefiore Hospital | Neoplastic Diseases (Medicine PM 721) | September 16-January 27, part time | 150.00 |
| **OPHTHALMOLOGY AND OTOLARYNGOLOGY** | | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Basic Science Course in Otolaryngology | September 29-June 5, full time | 800.00 |
| | Otolaryngology | October 28-December 16, part time | 30.00 |
| Children's Memorial Hospital, 707 Fullerton Ave., Chicago, Ill. | Neuromuscular Anomalies of the Eyes | November 9-14, full time | 75.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 2 Week Clinical Course in Otolaryngology | 1st of every week, full time | 50.00 |
| | 2 Week Clinical Course in Ophthalmology | 1st of every week, full time | 50.00 |
| Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11, Ill. | Endaural Otologic Surgery and Audiology | September 15-October 15, full time | 500.00 |
| | Postgraduate Basic Course in Ophthalmology | October-June, full time | 800.00 |
| At: Wesley Memorial Hospital | Fellow in Fenestration Surgery | Arranged, 2 to 6 months, full time | 500.00 |
| University of Illinois College of Medicine, 1853 West Polk St., Chicago 12, Ill. | Postgraduate Course in Ophthalmology | July 1-December 23, full time | 500.00 |
| | Seminar in Otolaryngology | September 29-October 4, full time | 75.00 |
| | Basic Otolaryngology | October 6-June 19, full time | 750.00 |
| | Bronchoesophagology | September 15-29, full time | 150.00 |
| Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La. | Ocular Pathology | December 1-6, full time | 100.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Harvard and Massachusetts Eye and Ear Infirmary | Basic Sciences in Ophthalmology [33] | September 29 to March 7, full time | 700.00 [19] |
| | Basic Sciences in Otolaryngology [34] | November 3-March 28, full time | 925.00 [19] |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. | | | |
| At: Boston City Hospital | Neuro-Ophthalmology | November 17-21, full time | 75.00 [19] |
| | Ophthalmology | October 20-November 14, January 5-30, part time | 75.00 [19] |
| Ophthalmic Study Council, 243 Charles St., Boston, Mass. | | | |
| At: Westbrook Jr. College, Portland, Me. | Lancaster Courses in Ophthalmology | June 23-September 6, full time | 325.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Basic Ophthalmology (Limit 10) | September-June, full time | 900.00 |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and or Tuition |
|---|---|---|---|
| **OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued** | | | |
| American Academy of Ophthalmology and Otolaryngology, 100 First Avenue Bldg., Rochester, Minn. At: Palmer House, Chicago, Ill. | Instruction Courses | October 12-17 | $2.00 per hour |
| Home Study Course | Ophthalmology and Otolaryngology | September-June, part time | 20.00 each course |
| Washington University School of Medicine, Euclid Ave. and Kingshighway, St. Louis 10, Mo. | Basic Ophthalmology Course | September 15, 8 months, full time | 800.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. At: Montefiore Hospital | Elementary Ophthalmoscopy (Ophthalmology PM 60) | January 5-March 2, part time | 30.00 |
| At: Columbia Presbyterian Medical Center | Glaucoma (Ophthalmology PM 62) | October 20-December 8, part time | 30.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[37] At: Jewish Sanitarium and Hospital for Chronic Diseases | Ophthalmoscopy | October, 8 weeks, part time | 20.00 |
| New York Eye and Ear Infirmary, 218 2d Ave., New York, N. Y. | Neuro-Ophthalmology | Arranged, 1 month, part time | 75.00 |
| | Roentgenology—Eye | Arranged, 1 week, part time | 50.00 |
| | Clinical Histopathology of the Eye | Arranged, 1 month, part time | 75.00 |
| | Perimetry | Arranged, 4 weeks, part time | 75.00 |
| | Refraction | Arranged, 8 weeks, part time | 150.00 |
| | Operative Eye Surgery | Arranged, 4 weeks, part time | 150.00 |
| | Glaucoma | Arranged, 8 weeks, part time | 75.00 |
| | Ophthalmoscopy | Arranged, 4 weeks, part time | 75.00 |
| | Slit Lamp Microscopy | Arranged, 4 weeks, part time | 100.00 |
| | Anomalies of Extraocular Muscles | Arranged, 4 weeks, part time | 75.00 |
| | Plastic Eye Surgery | Arranged, 4 weeks, part time | 150.00 |
| | Physiological Optics in Clinical Practice | Arranged, 6 weeks, part time | 100.00 |
| | External Diseases of the Eye | Arranged, 4 weeks, part time | 75.00 |
| | Roentgenology | Arranged, 2 weeks, part time | 75.00 |
| | Allergy of the Eyes and Upper Respiratory Tract | Arranged, 24 sessions | 150.00 |
| | Rehabilitation of the Hard of Hearing | Arranged, 4 sessions | 75.00 |
| | Didactic and Operative Work in Rhinoplasty and Otoplasty | Arranged, 4 weeks, part time | 250.00 |
| | The Conservative Management of Acute Sinusitis and Chronic Rhinitis | Arranged, 6 sessions | 75.00 |
| | Resuscitation | Arranged, 1 day | 50.00 |
| | Clinical Physio-Pathology of the Ear | Arranged, part time | 150.00 |
| | Broncho-esophagology and Laryngeal Surgery | Arranged, part time | 250.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Otolaryngology and Ophthalmology | October 1, 9 months, full time | 1,000.00 |
| | Otolaryngology and Ophthalmology, Including Cadaver, EENT and Refraction | October, January, 3 months | 600.00 |
| | Refraction | Arranged, 4 weeks, part time | 100.00 |
| | Advanced Otology | Arranged, 2 weeks, part time | 250.00 |
| | Ophthalmology, Including Cadaver Ophthalmology and Refraction | Arranged, 3 months, part time | 300.00 |
| | Head and Neck Dissection | Arranged, 4 weeks, part time | 150.00 |
| | Motor Anomalies | Arranged, 4 weeks, part time | 50.00 |
| | Surgical Anatomy of Nose Accessory Sinuses | Arranged, 4 weeks, part time | 150.00 |
| | Operative Otology (Cadaver) | Arranged, 4 weeks, part time | 100.00 |
| | Operative Ophthalmology (Cadaver) | Arranged, 4 weeks, part time | 100.00 |
| | Operative Nose and Throat (Cadaver) | Arranged, 4 weeks, part time | 150.00 |
| | Seminar in Ophthalmology and Otolaryngology | Arranged, 5 days, full time | 50.00 |
| | Clinical Ophthalmology | Arranged, 6 weeks or 3 months, part time | 75.00 [11] |
| | Clinical Otolaryngology | Arranged, 6 weeks or 3 months, part time | 100.00 [12] |
| | Clinical Ophthalmology and Otolaryngology | Arranged, 6 weeks or 3 months, full time | 150.00 [13] |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 574-A Surgery of the Eye (for Specialists) | October 27-November 1, full time | 100.00 |
| | 575-A Differential Diagnosis with the Slit Lamp (for Specialists) | November 10-14, part time | 75.00 |
| | 576-A Ophthalmology (Graduate Course) | September 29-June 19, full time | 700.00 |
| | 577-A External Diseases of the Eye (for Specialists) | November 3-7, part time | 75.00 |
| | 578-A Ocular Expressions of Systemic Disease | November 10-14, part time | 50.00 |
| | 579-A Neuro-Ophthalmology | July 14-18, part time | 50.00 |
| | 5710-A Perimetry | July 14-18, part time | 50.00 |
| | 5711-A Ophthalmoscopy | July 21-25, part time | 50.00 |
| | 5713-A Ocular Therapeutics | July 21-25, part time | 50.00 |
| | 5714-A Histopathology | September 22-27, part time | 100.00 |
| | 590-A Intensive Course in Basic Sciences | September 15-26, part time | 100.00 |
| | 592-A Histopathology of the Ear, Nose and Throat | September 15-26, part time | 100.00 |
| | 595-A Basic Sciences of Otorhinolaryngology (Graduate Course) | September 29-June 19, full time | 700.00 |
| | 594-A Endaural Surgery | November 10-21, full time | 150.00 |
| | 596-A Anatomy of the Head, Neck and Thorax for Otolaryngologists | September 29-November 7, part time | 125.00 |
| | 597-A Neuroanatomy, Neuro-Physiology and Neuro-Otology | November 3-7, full time | 75.00 |
| | 598-A Pathology of the Head and Neck | November 24-December 19, part time | 125.00 |
| | 599-A Allery for Otolaryngologists | December 8-12, full time | 75.00 |
| | 5910-A Surgery of the Head and Neck | January 5-16, full time | 200.00 |
| | 911-A Advanced Surgery of the Neck | September 29-October 10, full time | 250.00 |
| University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore. | Diseases of the Uvea [29] | November 17-19, full time | 30.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Otolaryngology [23] | September 29-May 23, full time | 900.00 |
| | Ophthalmology [23] | September 29-May 23, full time | 900.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| **OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued** | | | |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: The Texas Medical Center<br>At: Scott and White Memorial Hospitals [38] | Endaural Surgery and Audiology<br>Ophthalmology and Otolaryngology | July 16-19, full time<br>Arranged, 1 week, full time | $25.00<br>Arranged |
| Virginia Society of Ophthalmology and Otolaryngology, Box 98, Charlottesville, Va.<br>At: University of Virginia | Postgraduate Clinical Session | November, 4 days, full time | 35.00 |
| **ORTHOPEDIC SURGERY** | | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Diseases and Injuries of Bones and Joints | July 7-31, full time | 100.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Children's Hospital | Orthopedic Surgery 1 | Arranged, 1-12 months, full time | 800.00 [19] for 12 mo. |
| At: Massachusetts General Hospital | Orthopedic Surgery 2 | Arranged, 3 to 12 months | 800.00 [19] for 12 mo. |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Orthopedics in General Practice | November, 6 weeks, full time | 60.00 |
| | Orthopedics of the Foot | Arranged, 8 weeks, part time | 100.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Orthopedic Surgery for General Surgeons | Arranged, 3 months, part time | 75.00 |
| | Operative Orthopedics (Cadaver) | Arranged, 5 periods, part time | 100.00 |
| | Advanced Orthopedics of the Foot | Arranged, 8 periods, part time | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 581-A Basic Sciences as Related to Orthopedic Surgery (Graduate Course) | January 5-June 19, full time | 450.00 |
| | 582-A Orthopedics in General Practice | October 13-17, full time | 75.00 |
| | 583-A Anatomy for Orthopedic Surgeons | January 5-9, full time | 90.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Orthopedics [23] | September 29-May 23, full time | 900.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: Memorial Hospital, Corpus Christi, Texas | Office Orthopedics | September 10-November 12, 10 sessions | 25.00 |
| At: Scott and White Memorial Hospitals [38] | Orthopedic Surgery | Arranged, 2 weeks, full time | Arranged |
| **PATHOLOGY** | | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | General and Surgical Pathology | September 30-June 4, part time | 175.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Armed Forces Institute of Pathology, Washington, D. C.<br>At: Walter Reed Army Hospital, Washington 12, D. C. | Pathology of Ionizing Radiation Injury [40,41,42,43,44] | October 20-24, full time | None |
| | Forensic Pathology [40,41,42,43,44] | December 1-5, full time | None |
| | Recent Advances and Developments in Clinical Pathology [40,41,42,44] | December 8-12, full time | None |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 12 Month Department Course in Gross and Surgical Pathology | By appointment, full time | 900.00 |
| | 12 Month Course in Gross and Microscopic Pathology | By appointment, full time | 500.00 |
| | 6 Month Clinical Course in Gross and Surgical Pathology | By appointment, full time | 500.00 |
| | Personal Course in Surgical Pathology on Selective Subjects | By appointment, 1 or 2 weeks, full time | 15.00 per hour |
| | Personal Course in Surgical Pathology | By appointment every month, 2 or 4 weeks, full time | 150.00 for 2 weeks |
| | Personal Course in Pathology and Laboratory Medicine | September 17, 10 sessions | 100.00 |
| Johns Hopkins University School of Medicine, 710 N. Washington St., Baltimore 5, Md.<br>At: Johns Hopkins Hospital | Gynecology and Gynecological Pathology | October 1 and December 1, 2 months, full time | 150.00 |
| University of Maryland School of Medicine, 31 S. Greene St., Baltimore 1, Md. | Neuropathology [14] | Arranged, 6 months, full time | 200.00 plus 10.00 lab. fee |
| | Pathology [15] | Arranged, 6 months, full time | 150.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Free Hospital for Women | Pathology of Obstetrics and Gynecology | January 8-May 14, part time | 150.00 [19] |
| Wayne University College of Medicine, 1542 St. Antoine St., Detroit 26, Mich. | Gynecologic Pathology | December-March, part time | 50.00 |
| | Pathology of Parasitic Diseases | December-March, part time | 50.00 |
| | Neuropathology | December-March, part time | 50.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | General and Special Pathology (Pathology PM 30) | October 18-January 24, part time | 60.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Pathology | Arranged, 16 weeks, part time | 200.00 |
| | Clinical Pathology | Arranged, part time | 100.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Surgical Pathology | Arranged, 3 months, part time | 300.00 |
| | Urological Pathology | Arranged, 3 months, part time | 50.00 |
| | Blood Transfusions | Arranged, 2 weeks, part time | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | Pathology | Arranged, 3 months, part time | 300.00 |
| | Pathology | Arranged, 12 months, part time | 1,000.00 |
| | Pathology for Surgeons | Arranged, 1 month, part time | 100.00 |
| | 441-A Gynecological Pathology (for Specialists) | September 17-December 31, part time | 100.00 |
| | 442-A Surgical Pathology (for Specialists) | September 16-January 13, part time | 200.00 |
| | 443-A Principles of Pathology | September 16-January 13, part time | 200.00 |
| | 444-A Special Pathology for Surgeons [39] | January 8-June 18, part time | 125.00 |
| University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla. | Surgical Pathology | October, 10 weeks, part time | 50.00 |
| Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa. | Gynecologic and Obstetric Pathology, Urologic Pathology | September-June, part time | None |
| University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas<br>At: Scott and White Memorial Hospitals | Surgical Pathology and Pathologic Anatomy | Arranged, 2 weeks, full time | Arranged |
| | Clinical Pathology | Arranged, 2 weeks, full time | Arranged |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **PEDIATRICS** | | |
| University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo.<br>At: Estes Park, Colo. | Medical Social Problems in Obstetrics and Pediatrics | September 17-19, full time | $5.00 |
| Delaware Academy of General Practice, 1305 New Road, Wilmington 5, Del.<br>At: Wilmington General Hospital | Pediatrics for the General Practitioner | September 18, 11 sessions | 60.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 12 Month Department Course in Pediatrics | July 1, full time | 750.00 |
| | Personal Course in Pediatrics | September 24, 10 sessions | 80.00 |
| State University of Iowa, College of Medicine, Iowa City, Iowa<br>At: University Hospital | Pediatrics Conference | September, 1 day | 5.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Massachusetts General Hospital | Pediatrics 1 | October 1-May 29, full time | 800.00 [10] |
| | Pediatric Endocrinology and Related Metabolic Disturbances | October 6-11, full time | 75.00 [10] |
| At: Children's Hospital | Pediatrics 2 | September 2-December 19, January 5-April 24, full time | 500.00 [10] |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass.<br>At: The Boston Floating Hospital | Pediatrics I | November 3-7, full time | 40.00 [10] |
| | Pediatrics II | November 3-15, part time | 50.00 [10] |
| University of Michigan Medical School, Department of Postgraduate Medicine, Ann Arbor, Mich.<br>At: University Hospital | Pediatrics | October, 3½ days, full time | 30.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Allergy in Children (Pediatrics PM 31) | October 10-December 12, part time | 40.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Clinical Pediatrics | Continuously, 1, 3, 6, 9 and 12 months | ..... [16] |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Pediatric Allergy Course I | October, 20 weeks, part time | 300.00 |
| | Pediatrics | Arranged, 4 weeks, part time | 75.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 611-A Clinical Pediatrics | November 3-January 16, part time | 125.00 |
| | 612-A Clinical Pediatrics | October 6-31, part time | 150.00 |
| | 614-A Review of Clinical Pediatrics | September 8-13, full time | 50.00 |
| | 618-A Pediatric Cardiology | September 15-19, full time | 50.00 |
| At: Willard Parker Hospital | 617-A Communicable Diseases | January 12-16, full time | 50.00 |
| At: University, Bellevue, St. Vincent's, Memorial and Irvington Hospitals for Cardiac Children | 6110-A Pediatrics (Graduate Course) | September 22, 9-12 months, full time | 700.00 |
| Southern Pediatric Seminar, Saluda, N. C. | Pediatric Course | July 14-26, full time | 45.00 |
| University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla.<br>At: Tulsa, Okla. | Postgraduate Course in Pediatrics | December 5-6, full time | 10.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Pediatric Hematology | September 8-12, full time | 100.00 |
| | Pediatrics [28] | September 29-May 23, full time | 900.00 |
| St. Christopher's Hospital for Children, 2600 N. Lawrence St., Philadelphia 33, Pa. | Pediatrics for General Practitioners | November 6-March 26, part time | 50.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: St. Joseph's Infirmary (Classroom) | Pediatrics | September 4-December 11, part time | 25.00 |
| At: Scott and White Memorial Hospitals [38] | Pediatrics | 1st Monday of each month, 4 weeks, full time | Arranged |
| University of Washington School of Medicine, Seattle 5, Wash. | Pediatrics and Preventive Medicine | July 14-16, full time | 30.00 |
| | **PHARMACOLOGY** | | |
| Wayne University College of Medicine, 1552 St. Antoine St., Detroit 26, Mich. | Recent Advances in Pharmacology and Therapeutics | September-December, part time | 15.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Applied Pharmacology and Therapeutics | Arranged, part time | 100.00 |
| Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa. | Inter-Departmental Seminar | September-January, part time | None |
| | **PHYSICAL MEDICINE** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Physical Medicine | October 1-November 19, part time | 30.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C.<br>At: Walter Reed Army Hospital, Washington 12, D. C. | Physical Medicine [10,41,42] | October 1-3, full time | None |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Physical Medicine and Rehabilitation | Arranged, 4 weeks, part time | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 7310-A Physical Medicine and Rehabilitation | September 22-October 17, January 12-February 6, full time | 100.00 |
| | 7311-A Physical Medicine and Rehabilitation | July 14-25, full time | 75.00 |
| | 7312-A Seminar on the Rehabilitation of Children | October 20-24, full time | 40.00 |
| At: Institute of Physical Medicine and Rehabilitation | 738-A Physical Medicine and Rehabilitation (Graduate Course) | September 29-June 19, full time | 700.00 |
| | 739-A Physical Medicine and Rehabilitation | Arranged, 12 or 24 weeks, part time | 200.00 for 12 wks. |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Physical Medicine [23] | September 29-May 23, full time | 900.00 |
| | The Hand [40] | June 16-27, full time | 200.00 |
| | **PHYSIOLOGY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Surgical Physiology | October 2-June 4, part time | 75.00 |
| San Diego County Hospital, North Front and Dickenson Sts., San Diego 3, Calif. | Lectures in Basic and Applied Physiology | Throughout academic year, part time | None |
| Mercy Hospital, Hillcrest Drive, San Diego, Calif. | Physiology | Annually, 60 hours per year, part time | 50.00 |
| Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La. | Applied Physiology | Fall, first semester, part time | 50.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Normal and Pathological Physiology (Physiology PM 32) | October 22-April 22, part time | 100.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **PHYSIOLOGY—Continued** | | |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Physiology of Respiration | Arranged, 1 month, part time | $75.00 |
| | Physiology of the Nervous System | Arranged, 2 weeks, part time | 50.00 |
| | Physiology of the Special Senses | Arranged, 1 month, part time | 75.00 |
| | Physiology of the Endocrine System | Arranged, 1 month, part time | 75.00 |
| | Physiology and Chemistry of the Gastrointestinal Tract, Digestion | Arranged, 1 month, part time | 150.00 |
| | Physiology of the Cardiovascular System and Blood | Arranged, 1 month, part time | 75.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | Applied Physiology | Arranged, 36 hours, part time | 300.00 |
| | 329-A Normal and Pathological Physiology: Functional and Chemical Aspects | September 22-October 3, full time | 100.00 |
| Jefferson Medical College of Philadelphia, 1025 Walnut St., Philadelphia 7, Pa. | Seminar in Physiology | September-June, part time | None |
| | **PLASTIC SURGERY** | | |
| Manhattan General Hospital, 307 Second Ave., New York, N. Y. | Laboratory and Clinical Seminars in Plastic and Reconstructive Surgery of Head and Neck [17] | September 2-11, full time | 150.00 |
| | **POLIOMYELITIS** | | |
| Orthopaedic Hospital, 2400 S. Flower St., Los Angeles 7, Calif. | Poliomyelitis | October 20-23, full time | 15.00 |
| Georgia Warm Springs Foundation, Warm Springs, Ga. | Care of Acute and Convalescent Poliomyelitis | July, October, January, 5 days, full time | None |
| D. T. Watson School of Physiatrics, Leetsdale, Pa.[18] | Management of Acute Poliomyelitis with Emphasis on Prescription of the Respirator and Rocking Bed | Arranged, 5 days minimum, full time | 10.00 |
| | **PROCTOLOGY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Proctology | January 8-March 12, part time | 50.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Lecture and Cadaver Course in Proctology | October 22, 5 sessions | 75.00 |
| Tufts College Medical School, Postgraduate Division, 30 Bennet St., Boston 11, Mass. At: Boston Dispensary | Proctology I | October 20-24, full time | 40.00 [19] |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y.[87] At: Jewish Hospital | Proctology | October, 6 weeks, part time | 40.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Proctology, Gastroenterology, Operative Proctology (Cadaver) | October, January, 6 weeks, part time | 200.00 |
| | Clinical Proctology and Gastroenterology | October, January, 6 weeks, part time | 100.00 |
| | Clinical Proctology | Arranged, 6 weeks, part time | 75.00 |
| | Clinical and Cadaver Proctology | Arranged, 6 weeks, part time | 175.00 |
| | Clinical Gastroenterology | Arranged, 6 weeks, part time | 75.00 |
| University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas At: Scott and White Memorial Hospitals | Proctology | Arranged, 2 weeks, full time | Arranged |
| | **PUBLIC HEALTH** | | |
| U. S. Public Health Service, Communicable Disease Center, Atlanta, Ga. | General Bacteriology Part 1, Laboratory Diagnosis of Bacterial Diseases | September 2-12, full time | None |
| | Part 2, General Bacteriology | September 15-26, full time | None |
| | Enteric Bacteriology | September 29-October 10, full time | None |
| | Laboratory Diagnosis of Bacterial Diseases | October 27-31, full time | None |
| | Laboratory Diagnosis of Parasitic Diseases, Part 1, Intestinal Parasites | September 2-26, full time | None |
| | Part 2, Blood Parasites | September 29-October 17, full time | None |
| | Laboratory Diagnosis of Tuberculosis | November 3-7, full time | None |
| | Laboratory Diagnosis of Tuberculosis | November 10-21, full time | None |
| | Laboratory Diagnosis of Parasitic Diseases | November 10-14, full time | None |
| | Laboratory Diagnosis of Virus Diseases | November 10-21, full time | None |
| | Laboratory Methods in Medical Mycology | November 17-21, full time | None |
| | Laboratory Methods in the Study of Pulmonary Mycoses | November 24-December 12, full time | None |
| | Laboratory Diagnosis of Virus Diseases | November 24-28, full time | None |
| | Laboratory Diagnosis of Rabies | December 1-5, full time | None |
| Johns Hopkins University School of Hygiene and Public Health, 615 N. Wolfe St., Baltimore 5, Md. | Public Health [18] | September-May, full time | 800.00 |
| Albany Medical College, Albany, N. Y.[89] At: Albany, Syracuse, Rochester, Buffalo and Poughkeepsie | Extension Course in Public Health | Continuously, part time | 25.00 |
| Columbia University School of Public Health, 600 West 168th St., New York 32, N. Y. | Public Health Administration | September 25-May 23, full time | 810.00 |
| | Hospital Administration | September 25, 21 months, full time | 1,020.00 |
| | Administrative Medicine | September 25, 21 months, full time | 1,020.00 |
| University of Pittsburgh, Graduate School of Public Health, Pittsburgh 13, Pa. | Public Health Practice, Occupational Health and Hospital Administration | September-June, full time | 700.00 |
| University of Utah College of Medicine, Salt Lake City, Utah | Public Health | September, 2 days, full time | 20.00 |
| | **RADIOLOGY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | Roentgenology | September 30-June 2, full time | 100.00 |
| University of Southern California, 1200 N. State St., Los Angeles 33, Calif. At: Los Angeles County Hospital | The Essential Physics of Radiology | September-November, part time | 50.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C. At: Walter Reed Army Hospital, Washington 12, D. C. | Radiology [40,41,43] | October 14-16, full time | None |

References will be found on page 698.

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **RADIOLOGY—Continued** | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 12 Month Course in Diagnostic Radiology and X-Ray Therapy | By appointment, full time | $750.00 |
| | 8 Month Course in Diagnostic Roentgenology | By appointment, full time | 500.00 |
| | Routine Clinical Course in Diagnostic Roentgenology and Fluoroscopy | 3rd Monday of every month, 2 weeks, full time | 70.00 |
| | 2 Week Clinical and Didactic Course in Diagnostic Roentgenology and Flouroscopy | 1st Monday of each month, full time | 125.00 |
| | High and Low Voltage X-Ray Therapy | 1st of every week, 1 or more weeks, full time | 60.00 for 1 week |
| | Diagnostic Roentgenology | October 1, 10 sessions | 100.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass. | | | |
| At: Peter Bent Brigham Hospital | General Radiology 1 | Throughout the year, 1 or more months, full time | 150.00 per month |
| At: Massachusetts General Hospital | General Radiology 2 | Throughout the year, 1 or more months, full time | 150.00 per month |
| At: Boston City Hospital | General Radiology 3 | Throughout the year, 1 or more months, full time | 150.00 per month |
| At: Children's Hospital | Pediatric Radiology | Throughout the year, 1 or more months, full time | 150.00 per month |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | | | |
| At: Receiving Hospital | Medical X-Ray Conference | Quarterly, part time | 15.00 |
| University of Minnesota, Center for Continuation Study, Minneapolis, Minn. | Gastro-Intestinal Roentgenology for Radiologists [37] | October 20-25, full time | 40.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y. | | | |
| At: Columbia Presbyterian Medical Center | Radiological Physics (Radiology PM 1) | January 13-April 17, part time | 25.00 |
| | Pitfalls in Roentgen Diagnosis of Lesions of the Gastrointestinal Tract (Radiology PM 32) | November 3-14, part time | 25.00 |
| At: Mt. Sinai Hospital | Roentgen Diagnosis of Diseases of the Chest (Radiology PM 31) | October 20-31, part time | 25.00 |
| | Introduction to Nuclear Radiation Physics (Radiology PM 30) | October 14-January 27, part time | 60.00 |
| At: Hospital for Joint Diseases | Roentgenographic Interpretation of the Diseases of Bones and Joints (Radiology PM 80) | October 1-December 17, part time | 150.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y. [37] | | | |
| At: Jewish Hospital | X-Ray Diagnosis | October, 10 weeks, part time | 20.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Diagnostic Roentgenology | Arranged, 6 weeks, part time | 150.00 |
| | Radium and Roentgen Thrapy | Arranged, 6 weeks, part time | 150.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Roentgen Interpretation and Technic | October and January, 3 months, full time | 300.00 |
| | Advanced Diagnostic Roentgen and Radiotherapy | October and January, 3 months, full time | 300.00 |
| | Diagnostic Roentgen and Radiation Therapy | October and January, 12 months, full time | 1,000.00 |
| | Practical Course in Superficial and Deep X-Ray Therapy | Arranged, 4 weeks, part time | 100.00 |
| | Advanced Course in Radiotherapy | Arranged, 4 weeks, part time | 100.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 651-A Diagnostic Radiology for General Practitioners | October 1-May 6, October 3-May 6, part time | 100.00 |
| | 652-A Diagnostic Radiology | September 15-December 5, part time | 100.00 |
| | 653-A Radiology, Basic Sciences | September 29-June 19, full time | 700.00 |
| | 655-A Radiophysics | October 21-February 3, part time | 75.00 |
| American Roentgen Ray Society, Germantown Hospital, Philadelphia 44, Pa. | | | |
| At: Shamrock Hotel, Houston, Texas | Instructional Courses in Radiology | September 23-26 (at annual Meeting) | 5.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Radiology [23] | September 29-May 23, full time | 960.00 |
| University of Texas, Postgraduate School of Medicine, Temple Division, Temple, Texas | | | |
| At: Scott and White Memorial Hospitals | Radiology | Arranged, 3 weeks, full time | Arranged |
| | **SURGERY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | General Surgery and Surgical Specialties (Full Time Basic Science Course) | September 29-June 5 | Not given |
| | Traumatic Surgery | September 30-December 10, part time | 50.00 |
| | Surgical Diseases of the Peripheral Vascular System | January 6-February 24, part time | 30.00 |
| Mercy Hospital, Hillcrest Drive, San Diego, Calif. | Current Developments in Surgery [5] | Annually, 40 hours a year | None |
| University of California School of Medicine, Medical Extension, San Francisco, Calif. | | | |
| At: Toland Hall, University of California Hospital | Conference on General Surgery | September 8-12, full time | 75.00 |
| Office of the Surgeon General, Educational and Training Division, Washington, D. C. | | | |
| At: Brooke Army Hospital, Ft. Sam Houston, Texas | Tumor Surgery [10, 41, 42] | October 13-17, full time | None |
| At: Fitzsimons Army Hospital, Denver, Colo. | Physiological Considerations in General Surgery [40, 41, 42] | December 1-3, full time | Not given |
| At: Walter Reed Army Hospital, Washington 12, D. C. | Surgery [10, 41, 42] | November 17-21, full time | None |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | Intensive 2 Weeks Course in Surgical Technic | August 4, 18, September 8, 22, October 6, 20, November 3, December 1, full time | 200 |
| | 4 Week Course in Surgical Technic, Clinical Surgery, Surgical Anatomy, Pre- and Post-Operative Management | September 8, October 20, full time | 300.00 |
| | 2 Week Personal Course in General Surgery | October 6, full time | 250.00 |

References will be found on page 698.

V 14
1952

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **SURGERY—Continued** | | |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 1 Week Course in Surgery of Colon and Rectum | September 15, October 13, November 17, full time | $100.00 |
| | 2 Week Course in Surgical Anatomy on the Cadaver, Clinical Surgery, Pre- and Post-Operative Management | September 22, November 3, full time | 150.00 |
| | 1 Week Personal Course in Breast and Thyroid Surgery | October 6, full time | 150.00 |
| | 10 Hour Personal Course in Gallbladder Surgery | October 20, full time | 100.00 |
| | 2 Week Intensive Review Course Considering Basic Principles in General Surgery | September 8, full time | 200.00 |
| | 1 Week Personal Course in Esophageal Surgery | October 13, full time | 150.00 |
| | 1 Week Personal Course in Thoracic Surgery | October 20, full time | 100.00 |
| | 10 Hour Course in the Treatment of Varicose Veins | Every Monday, 2 days, full time | 40.00 |
| | 1 Week Personal Course in General Surgery | October 6, full time | 150.00 |
| | 10 Hour Course in the Treatment of Varicose Veins | 1st and 3rd Wednesday of each month, part time | 40.00 |
| | Practical and Didactic Course in Proctoscopy and Sigmoidoscopy | September 9, October 14, November 18 and January 6, 3 sessions | 50.00 |
| | Personal Course in Thoracic Surgery | September 24, 10 sessions | 100.00 |
| | Personal Course in Surgical Pathology, Gross and Microscopic | October 1, 10 sessions | 100.00 |
| | Personal Course in Surgical Diagnosis, Pre- and Post-Operative Management | September 17, 10 sessions | 100.00 |
| | Surgical Anatomy on the Cadaver | October 9, 10 sessions | 125.00 |
| | Surgical Technic with Practice | September 10, 10 sessions | 250.00 |
| Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La. | Surgery and Traumatology for General Practitioners | January 12-17, full time | 50.00 |
| Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15, Mass.<br>At: Massachusetts General Hospital | Experimental and Clinical Surgery | Arranged, 1 to 12 months, full time | $80.00 [10] for 12 months |
| University of Michigan, Department of Postgraduate Medicine, Ann Arbor, Mich.<br>At: University Hospital | Clinical Exercises for Practitioners | October 3-December 19, part time | 25.00 |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich. | Surgical Anatomy [31] | December-June, part time | 70.00 |
| | Surgery Seminar | Quarterly, part time | 15.00 |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Surgery of the Gastrointestinal Tract (Surgery PM 30) | October 13-November 7, full time | 150.00 |
| Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16, N. Y. [37]<br>At: St. John's Episcopal Hospital | Office Surgery | October, 8 weeks, part time | 20.00 |
| New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29, N. Y. | Thoracic Surgery | Fall, 3 weeks, full time | 825.00 |
| | Surgical Technique | Arranged, 50 hours, part time | 375.00 |
| | Surgical Anatomy | Arranged, 2 weeks, part time | 150.00 |
| | Combined Surgical Course including cadaver Surgery and Gynecology | October and January, 3 months, full time | 350.00 |
| | Clinical Surgery | October and January, 6 weeks, full time | 100.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Clinical and operative (cadaver) Surgery | October and January, 6 weeks, full time | 200.00 |
| | Traumatic Surgery including General Surgery, Orthopedic Surgery and Physical Medicine | Arranged, 2 months | 200.00 |
| | Surgical Aspects of Peripheral Vascular Disease | Arranged | 200.00 |
| | Thoracic Surgery | Arranged | 200.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 552-A Diagnosis and Treatment of Peripheral Nerve Injuries | January 12-16, full time | 90.00 |
| | 551-A The Intervertebral Disc | October 6-10, full time | 60.00 |
| | 661-A Review of General Surgery (For Specialists) | September 29-October 25, full time | 300.00 |
| | 663-A Recent Advances in Surgery | September 8-20, full time | 200.00 |
| | 665-A Surgery | September 29-June 19, full time | 700.00 |
| At: Beekman-Downtown Hospital | 664-A Trauma (Excluding Fractures) [29] | December 1-6, full time | 125.00 |
| | 666-A Diagnosis and Treatment of Trauma | December 8-13, full time | 90.00 |
| | 6616-A Trauma of the Genitourinary System | September 9-October 14, part time | 50.00 |
| | 6611-A Pitfalls in Internal Fixation of Fractures [29] | November 10-15, full time | 90.00 |
| Cleveland Clinic Foundation and Frank E. Bunts Educational Institute, 2020 E. 93d St., Cleveland, Ohio | Surgery of the Abdomen | October 15-16, full time | 15.00 |
| University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City, Okla. | Postgraduate Course in General Surgery | November 18-19, full time | 10.00 |
| University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore. | General Surgery | October 20-24, full time | 50.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | General Surgery | September 29-May 23, full time | 960.00 |
| Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40, Pa. | Laryngology and Laryngeal Surgery | Fall, October 27-November 7, 2 weeks, full time | 250.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas | | | |
| At: Memorial Hospital, Corpus Christi, Texas | Present Treatment in General Surgery | December 10-February 25, 10 sessions | 25.00 |
| At: University of Texas Campus, Austin, Texas | Present Treatment in General Surgery | September 15-November 17, 10 sessions | 25.00 |
| At: Robert B. Green Memorial Hospital, San Antonio, Texas | Abdominal Surgery | November, 2 days, part time | 15.00 |
| University of Utah College of Medicine, Salt Lake City, Utah | Traumatic Surgery | November, 2½ days, full time | 25.00 |

References will be found on page 698.

149
52

*Postgraduate Continuation Courses for Physicians—July 1, 1952 to Jan. 15, 1953—Continued*

| Institution | Title of Course | Schedule of Course | Registration Fee and/or Tuition |
|---|---|---|---|
| | **THERAPY** | | |
| Columbia University, 630 W. 168th St., New York 32, N. Y.<br>At: Mt. Sinai Hospital | Recent Advances in Therapy (Medicine PM 44) | October 15-December 3, part time | $60.00 |
| | Principles and practices of Diet Therapy (Medicine PM 40) | October 13-November 17, part time | 20.00 |
| | **TROPICAL MEDICINE** | | |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 735-A Topical Medicine | January 5-February 20, full time | 300.00 |
| | **UROLOGY** | | |
| College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33, Calif. | General Urology | January 7-March 4, part time | 35.00 |
| Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill. | 2 week Intensive Course in Urology | September 8, full time | 225.00 |
| American Urological Association, 102-110 Second Ave., S. W., Rochester, Minn.<br>At: Kansas City, Mo.<br>At: Cleveland, Ohio | Postgraduate Course in Urology | December 14-18, full time | 50.00 |
| | Postgraduate Course in Urology | December 1-5, full time | 50.00 |
| New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19, N. Y. | Urology | October 1, 8 months, full time | 800.00 |
| | Instrumental Urology | Arranged, 4 weeks, part time | 75.00 |
| | Operative Surgery (Urological) for Specialists | Arranged, 2 months, part time | 150.00 |
| New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y. | 672-A Urology (Graduate Course) | September 29-June 19, full time | 700.00 |
| | 674-A Refresher Course in Basic Urology | November 10-15, full time | 60.00 |
| | 564-A Infertility | December 8-10, full time | 40.00 |
| University of Oregon, 3181 S. W. Sam Jackson Park Rd., Portland 1, Ore. | Urology | November 3-7, full time | 50.00 |
| Graduate School of Medicine, University of Pennsylvania, 36th and Pine Sts., Philadelphia, Pa. | Urology [23] | September 29-May 23, full time | 960.00 |
| University of Texas, Postgraduate School of Medicine, 207-A Hermann Professional Bldg., Houston 25, Texas<br>At: M. D. Anderson Hospital<br>At: Scott and White Memorial Hospitals [38] | Office Urology | September 9-December 16, part time | 25.00 |
| | Clinical Urology | Arranged, 2 weeks, full time | Arranged |
| | **VENEREAL DISEASES** | | |
| U. S. Public Health Service, Hot Springs National Park, Ark. | Venereal Disease Postgraduate Course | September, 5 days, full time | None |
| Wayne University College of Medicine, 1512 St. Antoine St., Detroit 26, Mich.<br>At: Social Hygiene Clinic | Conference on Venereal Diseases | Quarterly, part time | 15.00 |
| Institute for the Study of Venereal Diseases of the University of Pennsylvania, 34th and Locust Sts., Philadelphia, Pa. | 6 Months Essential Basic Training Course | Arranged, full time | Arranged |
| | 4 Week Intensive Review Course | Arranged, full time | Arranged |
| | 3 Week Intensive Review Course | Arranged, full time | Arranged |
| | 10 Day Refresher Course | Arranged, full time | Arranged |

1. Leading to the Degree of Master of Medical Science in Surgery, Medicine, OB and Gyn., Anesthesiology, Otolaryngology, Pediatrics, Radiology and Urology.

2. Course held jointly with San Diego County Hospital.

3. Simultaneous Translation of lectures in Spanish.

4. For Cleveland Area physicians. $40.00 outside Cleveland area. Interns—free.

5. Primarily for Interns and Residents but is open to M.D.'s.

6. Plus $25 for anatomical material used in surgical Anatomy courses.

7. Also sponsored by Yale School of Medicine.

8. Also sponsored by University of Chicago, University of Illinois, Chicago Medical School, Northwestern University and Stritch School of Medicine.

9. For House staff of Hillcrest Hospital. Neighboring Physicians are privileged to attend.

10. Registration fee $5.00.

11. 6 weeks. 3 months $100.00.

12. 6 weeks. 3 months $150.00.

13 6 weeks. 3 months $250.00.

14. To aid in meeting requirement of specialty boards in Neurological sciences and covers basic studies in diseases of the central nervous system.

15. To prepare for examinations in Surgery and surgical specialties and internal medicine.

16. 1 month $150.00. 9 months $650.00. 2 months $250.00. 12 months $850.00. 6 months $450.00.

17. For Diplomates of American Board of Otolaryngology.

18. Sponsored by University of Pittsburgh.

19. Special training courses in V. D., Mental Hygiene, Maternal and Child Health, Hospital Administration, Medical Care Administration.

20. New York State Health Dept., contributes to course.

21. Course applies particularly to Physicians in the Philadelphia area.

22. Also sponsored by American Cancer Society and State Board of Health.

23. Formal basic science course for Specialty Board Certification.

24. For members. S.W. Society, or AAGP. $15 for non-members.

25. Really 3 one day Symposia with the privilege of registering for all 3 with payment of 1 fee or for any separate one ($17.50 for one day).

26. Stated 2 week period may be followed by additional studies at $100 per week. Course may also be taken by Philadelphia area Physicians on 6 consecutive Thursdays, 36 hours at $150.00.

27. For Non-alumni. Alumni of Graduate School $25.00. Students matriculating in Graduate School on September 29, $15.00.

28. Open only to Physicians who have been formally approved and accepted for training in Psychoanalysis by the Admittance Committee of the Los Angeles Institute of Psychoanalysis.

29. For specialists.

30. Will include: Anatomical, neurological, physiological, dermatological, neurologic surgery and rehabilitation. To present the hand as a medical clinical entity rather than the hand from the point of view of acute injuries or infections.

31. Limited to 20 senior surgical residents.

32. Active participation in operative procedures is not provided in this course.

33. Consists of 3 separate courses and students may be admitted to any one individually.

34. Consists of 4 separate courses and students may be admitted to any one individually.

35. Candidates in training only.

36. Advanced candidates in training only.

37. Medical Society County of Kings and State University of New York College of Medicine.

38. Given by Temple Division of University of Texas, PG School of Medicine.

39. Prerequisite—Course 443-A.

40. Attendance is encouraged from Regular, Reserve or National Guard Medical officers of the Armed Forces on active duty, at Government expense. Attendance will be considered on space available basis and at the individual's own expense in the following priority:

a. Medical officers of the Armed Forces not on active duty;

b. Physicians and surgeons from other Federal agencies;

c. Civilian physicians.

41. Application procedure. Applications should be forwarded so as to reach the addressees listed below not later than six weeks prior to the opening date of the course.

a. Applications from Army Medical officers on active duty and full-time Civil Service physicians on duty at Army installations will be forwarded to the office of the Surgeon General, Department of the Army, Washington 25, D. C., ATTENTION: Personnel Division, Career Guidance Section.

b. Applications from Army Reserve Medical officers not currently on active duty will be forwarded through channels to the Army Area Commander.

c. Applications from National Guard Medical officers should be forwarded through channels to the National Guard Bureau, Washington 25, D. C.

d. Applications from Medical officers from other Branches of the Armed Forces should be forwarded through regularly established channels.

e. All other applications should be forwarded to the Hospital Commander of the installation offering the course.

42. For Board certified and/or board qualified Chiefs or Assistant Chiefs of Services or officers well advanced in the study of this specialty.

43. Officers partially qualified in the specialty or officers responsible for medical treatment in this specialty or the General Practitioner.

44. Course open to pathologists only.

45. Course open to pathologists, gynecologists or surgeons.

46. Sponsored by the M. & R. Laboratories in Columbus, Ohio.

47. Also sponsored by Michigan State Medical Society, Wayne University and Michigan Department of Health.

48. First month, 2nd month, $75; 3rd month, $50, following months, $25.

49. First month, 2nd month, $75; 3rd month, $50.

50. This course available only to physicians certified by American Boards.

51. Including luncheons and refreshments.

52. $125.00 per quarter. $12.00 per week for short periods.

53. Primarily for house staff of Hillcrest Memorial Hospital, but neighboring physicians are privileged to attend.

V 14
1952

# BUREAU OF LEGAL MEDICINE AND LEGISLATION

## COMMITTEE ON MEDICOLEGAL PROBLEMS

*The Committee on Medicolegal Problems of the American Medical Association has approved the publication of the following report by Israel Davidsohn, M.D., Philip Levine, M.D., and Alexander S. Wiener, M.D.*

### MEDICOLEGAL APPLICATION OF BLOOD GROUPING TESTS

During the 15 years (1937-1952) that have elapsed since the Committee on Medicolegal Blood Grouping Tests of the American Medical Association summarized the significance of blood grouping tests in legal medicine, great progress has been made in the understanding of the human blood factors. New blood groups have been discovered and, among these, the rhesus types have proved to be of especial importance. These new groups have been shown to obey the laws of inheritance and have thereby opened new paths in the study of human genetics and have found immediate applications in courts of law in the settlement of cases of disputed paternity. Certain aspects of the subject are still controversial.

In this report the committee has undertaken to deal objectively with those matters in which the opinions of experts are not yet in general agreement and to bring the subject up to date for the benefit of those who have need of such information for medicolegal purposes.

#### PRESENT STATUS OF THE BLOOD GROUPS

At the time of the previous report, knowledge concerning the human blood group factors was confined almost entirely to the A-B-O system and the M-N system, with only limited knowledge concerning a third system of blood types involving the agglutinogen P. To date, more than eight independent blood group systems have been identified. In this portion of the report we shall summarize the serologic facts concerning these blood factors.

In the case of the A-B-O blood groups, three different nomenclatures were suggested, and similarly there have been several different systems of notations proposed for the Rh-Hr types. Although the problem for the A-B-O groups has been resolved by the universal adoption of a single nomenclature, in the case of the Rh-Hr types there are two methods of designation in use at the present time.

*A-B-O Blood Groups.*—As shown by Landsteiner, who discovered the blood groups, the blood of every person contains either one, or both, or neither of two agglutinable factors designated by him by the letters A and B. Moreover, human serums contain two corresponding isoagglutinins designated anti-A and anti-B. Only those agglutinins are present in the serum for which the corresponding agglutinogens are lacking from the cells, except during the first few months of life. Thus, the composition of the four blood groups can be summarized as shown in table 1.

The blood group of a person is determined by testing his red cells with anti-A and anti-B serums and his serum or plasma against known cells of groups O, A, and B. Satisfactory high-titered serums are currently prepared by injecting human volunteers with group-incompatible blood or material containing blood group substances. While most experts prepare their own blood group serums, commercial serums that conform with the minimum requirements of the National Institutes of Health may also be used.

Acknowledgment is made of comments and suggestions received from the following consultants: E. L. DeGowin, M.D., J. J. Graydon, M.D. (Australia), R. Rosenfield, M.D., M. S. Sachs, M.D., R. T. Simmons, Ph.D. (Australia), L. H. Snyder, M.D., C. Stormont, Ph.D., L. N. Sussman, M.D., L. J. Unger, M.D., P. Vogel, M.D., I. B. Wexler, M.D., and E. Witebsky, M.D.

Qualitative differences in the agglutinogen A exist. The two main varieties of this agglutinogen are designated $A_1$ and $A_2$, respectively, and give rise to two subgroups in group A ($A_1$ and $A_2$), and in group AB ($A_1B$ and $A_2B$), thus increasing the number of blood groups from four to six. Among Caucasoids between one-fifth and one-fourth of persons with agglutinogen A belong to subgroup $A_2$. Among Negroids the relative incidence of $A_2$ is somewhat higher, while Mongoloids are characterized by the virtual absence of subgroup $A_2$.

Still other variants of agglutinogen A exist, designated as $A_3$, $A_4$, etc., which are quite rare, and the testing serums used must be potent enough to detect these more weakly reacting variants. Forms intermediate between $A_1$ and $A_2$ also exist; these are relatively uncommon among Caucasoids, but more frequent among Negroids.

Group O blood cells are characterized not merely by the absence of agglutinogens A and B but also by the presence of a specific property O, which is also present in the blood cells of subgroup $A_2$. Naturally occurring anti-O agglutinins in human serums are rare, and are found oftenest in persons of subgroup $A_1B$. Reagents of anti-O specificity have been prepared from normal ox serums, eel serums, and from anti-Shigella immune goat serums. The low titer and specificity of almost all anti-O reagents have been a cause of confusion. At any rate, due to the difficulty of obtaining suitable reagents, the blood factor O is hardly ever tested for in practical work.

TABLE 1.—*The Four Landsteiner Blood Groups*

| Blood Group | Cells (Agglutinogens) | Serum (Isoagglutinins) | Approximate Incidence in New York City, % * | |
|---|---|---|---|---|
| | | | Caucasoids | Negroids |
| O | — | anti-A and anti-B | 42.2 | 51.5 |
| A | A | anti-B | 39.2 | 29.5 |
| B | B | anti-A | 13.5 | 15.5 |
| AB | AB | ..... | 5.1 | 3.5 |

* Wiener, A. S.: Heredity of the Rh Blood Types; Observations in a Series of 526 Cases of Disputed Parentage, Am. J. Human Genet. **2**: 177, 1950.

TABLE 2.—*The Three M-N Types*

| Blood Type | Cell Reactions with Serums | | Distribution in New York City % * | |
|---|---|---|---|---|
| | Anti-M | Anti-N | Caucasoids | Negroids |
| M | + | — | 29.9 | 23.0 |
| N | — | + | 19.9 | 25.5 |
| MN | + | + | 50.2 | 51.5 |

* Wiener, A. S.: Heredity of the Rh Blood Types; Observations in a Series of 526 Cases of Disputed Parentage, Am. J. Human Genet. **2**: 177, 1950.

*M-N Types.*—Serums for demonstrating the agglutinogens M and N are prepared by immunizing rabbits with blood of the appropriate type and then removing species-specific antibodies by absorption. With anti-M and anti-N serums, three blood types can be differentiated, namely, type M (possessing agglutinogen M but not N), type N (possessing agglutinogen N but not M), and type MN (possessing both agglutinogens). Blood lacking both agglutinogens M and N has not been found (table 2). Isoagglutinins for M and N may occur in human serum either naturally or as a result of isoimmunization, but these are very rare; about a score of serums with anti-M have been reported, and only a few with anti-N.

There is a variant of the agglutinogen N, designated as $N_2$, which is characterized by its weak reactions with anti-N serum. This agglutinogen has been found so far only in type MN ($MN_2$). The incidence of this variant in Denmark is reported to be about 1 in 10,000, while in New York it has been found to be 1 in 2,000. The anti-N type serum used must be capable of detecting this variant in order to avoid errors when bloods are typed in medicolegal cases. It is also recommended that at least two different serums of each kind, anti-M and anti-N, be used for testing the blood samples. Anti-M and anti-N serums are available commercially from firms licensed by the National Institutes of Health. However, the medicolegal

expert as a rule prepares his own reagents, because in that way he best acquires the experience needed for precise work.

Several years ago, a blood factor S that is demonstrable with isoimmune human serums and is related to the M-N system was discovered. The relationship of S to M-N was shown by the unequal distribution of the agglutinogen S in the three M-N types as follows: of type M bloods, 73.4% were S-positive; of type MN bloods, 54.1% were S-positive; and of type N bloods, 32.3% were S-positive. In general, about 57.5% of all Caucasoid bloods are agglutinated by anti-S serums. More recently, another blood factor s, reciprocally related to agglutinogen S, has been found, so that nine M-N-S-s types are now known, as follows: M.S, M.Ss, M.s, N.S, N.Ss, N.s, MN.S, MN.Ss, and MN.s. While adequate amounts of potent serums anti-S and anti-s are not yet available, one may hope that they soon will be, thus enhancing considerably the practical usefulness of this system of blood types.

Anti-S and anti-s serums are available only in laboratories doing research on blood grouping. Several examples of anti-S have thus far been found that give sharp reactions with the saline agglutination method. To date, on the other hand, only a single example of anti-s has been found.

TABLE 3.—*Rh-Hr Types*

| 8 Rh Types: Reactions with Anti-Rh Serums | | | | 18 Rh-Hr Types: Reactions with Anti-Hr Serums | | | Approximate Distribution in New York City, %* | |
|---|---|---|---|---|---|---|---|---|
| Anti-$Rh_0$ | Anti-rh′ | Anti-rh″ | Designations | Anti-hr′ | Anti-hr″ | Designations | Caucasoids | Negroids |
| − | − | − | rh | + | + | rh | 13.5 | 7.5 |
| − | + | − | rh′ | + | + | rh′rh | 0.9 | 0.5 |
| | | | | − | + | rh′rh′ | 0.01 | x † |
| − | − | + | rh″ | + | + | rh″rh | 0.5 | 0.5 |
| | | | | + | − | rh″rh″ | 0.005 | x |
| − | + | + | rh′rh″ (or $rh_Y$) | + | + | $rh_Yrh$ | 0.01 | x |
| | | | | − | + | $rh_Yrh'$ | x | x |
| | | | | + | − | $rh_Yrh''$ | x | x |
| | | | | − | − | $rh_Yrh_Y$ | x | x |
| + | − | ← | $Rh_0$ | + | + | $Rh_0$ | 2.5 | 42.5 |
| + | + | − | $Rh_1$ | + | + | $Rh_1rh$ | 33.5 | 26.0 |
| | | | | − | + | $Rh_1rh_1$ | 29.5 | 2.0 |
| + | − | + | $Rh_2$ | + | + | $Rh_2rh$ | 12.0 | 18.0 |
| | | | | + | − | $Rh_2Rh_2$ | 2.5 | 2.0 |
| + | + | + | $Rh_1Rh_2$ ‡ (or $Rh_Z$) | + | + | $Rh_Zrh_0$ | 13.8 | 6.0 |
| | | | | − | + | $Rh_ZRh_1$ | 0.2 | x |
| | | | | + | − | $Rh_ZRh_2$ | x | x |
| | | | | − | − | $Rh_ZRh_Z$ | x | x |

* These results do not take into account the $Rh_0$ variants or the rh$^w$ factor.

† The blood types indicated by x are very rare, and have not been observed in tests on random series of persons, when the series included several hundred or even thousands of persons.

‡ Drs. Davidsohn and Levine warn that the use of $Rh_Z$ for $Rh_1Rh_2$ as a phenotype and of $R^z$ as a gene may lead to confusion.

*P Agglutinogen.*—The blood factor P agglutinogen was discovered with the aid of immune rabbit serums at the same time as M and N. Naturally occurring anti-P agglutinins have also been found in human and animal serums, and most studies have been done with human serums containing such rare anti-P agglutinins. Two major types can be distinguished with the aid of anti-P serums, namely, P-positive (or type P) and P-negative (or type pp). Approximately 75% of Caucasoids are P-positive, while as many as 98% of Negroids are P-positive. In addition, occasionally bloods are encountered that give weak reactions with anti-P serums, indicating the existence of variants of the P agglutinogen. The P agglutinogen has not been applied in medicolegal work because of the difficulty of obtaining satisfactory antiserums.

*Rh-Hr Types.*—Selected immune animal serums prepared by injecting the blood of monkeys into rabbits or guinea pigs will clump the blood cells of approximately 85% of Caucasoids, due to the presence of a factor designated as Rh. Serums giving parallel or related reactions can be obtained from mothers of erythroblastotic babies, patients who have been sensitized by blood transfusions, or volunteers who are deliberately immunized with blood of an incompatible Rh type. While all anti-rhesus animal serums have given parallel reactions in tests on human blood, anti-Rh serums of human origin differ in their reactions. Moreover, the human serums give stronger and more specific reactions, so that at present all Rh-Hr tests are done with such serums, though the anti-rhesus animal serums remain of considerable theoretical interest.

TABLE 4.—*Nomenclature of the Rh-Hr Types*

| Blood Factors | C-D-E Equivalents | Phenotypes and Agglutinogens | C-D-E Equivalents |
|---|---|---|---|
| $Rh_0$ | D | rh | ede |
| rh′ | C | rh′ | Cde |
| rh″ | E | rh″ | edE |
| (Hr$_0$) | (d) | $rh_Y$ | CdE |
| hr′ | e | (or rh′rh″) | |
| hr″ | e | $Rh_0$ | eDe |
| | | $Rh_1$ | CDe |
| Rh variants | | $Rh_2$ | eDE |
| rh$^w$ | C$^w$ | $Rh_Z$ | CDE |
| ℜho * | D$^u$ | (or $Rh_1Rh_2$) | |
| | | $Rh_1{}^w$ | C$^w$De |
| | | ℜh$_1$ * | CD$^u$e |
| | | ℜh$_2$ * | eD$^u$E |
| | | ℜh$_0$ * | eD$^u$e |

* Drs. Davidsohn and Levine suggest the symbols $Rh_{1w}$, $Rh_{2u}$, and $Rh_{0u}$, respectively, as alternatives for those given in the table.

The human antiserums are classified into two broad categories, namely, anti-Rh serums and anti-Hr serums. Of the anti-Rh serums, the one corresponding to the animal anti-rhesus serum and giving 85% positive reactions is designated anti-$Rh_0$; a second serum giving approximately 70% positive reactions is designated anti-rh′, while a third serum giving about 30% positive reactions is designated anti-rh″. When tests are carried out with all three of the Rh antiserums, anti-$Rh_0$, anti-rh′, and anti-rh″, eight types of blood can be distinguished (table 3). In tables 4 and 5 a list of equivalents are given whereby this table can be converted into the C-D-E notations. Thus the original Rh-negative type actually includes four types of blood, rh, rh′ rh″, and rh′rh″, while the Rh-positive type includes the four types $Rh_0$, $Rh_1$, $Rh_2$ and $Rh_1Rh_2$. It will be noted that bloods that contain the $Rh_0$ factor are indicated by R in the symbols for their type, while those lacking the $Rh_0$ factor are indicated by r. The reason for this differentiation is to emphasize the greater importance of the $Rh_0$ factor clinically and the special position that it holds serologically.

The situation is further complicated by the existence of reciprocally related Hr factors. Many examples of anti-hr′ (anti-c) serum giving reactions reciprocally related to anti-rh′ (anti-C) have been found, while only a few examples of anti-hr″ (anti-e) have been encountered, so that fewer studies have been carried out on the hr″ factor. Anti-Hr$_0$ (anti-d) serum is not available. One or two specimens of this serum have been recorded, but the reports require confirmation. When tests for factors hr′ and hr″ are carried out in addition to the tests for the three Rh factors, the number of distinguishable Rh-Hr types is considerably increased. In order to designate the Rh-Hr types, the following convention has been adopted. When tests have been done only for the Rh factors and not the Hr factors, a single symbol is used to indicate the eight possible types as follows: rh, rh′, rh″, $rh_Y$, $Rh_0$, $Rh_1$, $Rh_2$, and $Rh_Z$. It will be noted that the shorthand symbol $rh_Y$ replaces the symbol rh′rh″, while $Rh_Z$ is used in place of $Rh_1Rh_2$. A second symbol is used to indicate the re-

TABLE 5.—*Anti-Rhesus Serums*

| Specificity of the Antiserums: Rh-Hr Nomenclature | C-D-E Equivalents | Approximate Incidence of Positive and Negative Reactions Among Caucasoids: Positive | Negative |
|---|---|---|---|
| anti-$Rh_0$ (anti-Hr$_0$) | anti-D (anti-d) | 85 | 15 |
| | | 63 | 37 |
| anti-rh′ | anti-C | 70 | 30 |
| anti-hr′ | anti-c | 80 | 20 |
| anti-rh″ | anti-E | 30 | 70 |
| anti-hr″ | anti-e | 97 | 3 |

V 14 1952

sults of the Hr tests as shown in table 3. It is important to emphasize that these are phenotype designations like such terms as group O, blue-eyed, or tall, and are quite independent of any genetic theory.

In tests of bloods with anti-rh′ (anti-C) and anti-hr′ (anti-c) in general only three combinations of reactions occur, as in the case of the M-N factors. A similar relationship is observed in tests of bloods with anti-rh″ (anti-E) and anti-hr″ (anti-e) (tables 3 and 11).

Anti-Rh and anti-Hr serums are distributed commercially by firms licensed by the National Institutes of Health, but most experts prefer to prepare their own antiserums. Ample quantities are available of serums of anti-$Rh_o$, anti-rh′, and anti-rh″, and anti-hr′ specificities, while anti-hr″ serum can be obtained in limited amounts only.

The subject has been complicated further by the discovery that rare bloods exist that give weak reactions with one or more of the Rh and Hr antiserums, namely, the so-called Rh-Hr variants, or "intermediate" Rh-Hr blood types. The most important variants are those affecting the $Rh_o$ factor. If a person with an $Rh_o$ variant ($D^u$) is incorrectly typed as Rh-negative, transfusion of his blood into an Rh-negative person may sensitize the recipient, or, if a recipient of such blood is already sensitized, a serious transfusion reaction could result. Recently, special methods have been devised using antiglobulin serum or treating the cells with proteolytic enzymes, by which it is now possible to identify blood containing $Rh_o$ variants with almost as much reliability as blood giving typical reactions. Extensive studies have been carried out on variants of the rh′ factor, and for one particular variant of the rh′ factor a corresponding antiserum, anti-$rh^w$ (anti-$C^w$), has been found. Anti-$rh^w$ serum gives strong reactions that permit a sharp division, for example, of persons of type $Rh_1$ into subtypes $Rh_1{}^w$ and $Rh_1$ proper, and a similar subdivision can be made of persons belonging to type $Rh_2$. Variants have also been encountered of the factors rh″, hr′, and hr″. In general, Rh-Hr variants occur with highest frequency among Negroids. In medicolegal work it is important to be thoroughly familiar with the variants, because incorrect typing of such bloods might result in erroneous conclusions in cases of disputed parentage. Anti-$rh^w$ serum is rare and is used only by investigators specializing in blood grouping, while, as already pointed out, anti-$Hr_o$ is not available.

*Secretor Types.*—The A-B-O factors are not restricted to the red blood cells but are present also in the cells of tissues and organs, with the exception of nerve tissue, epithelium, skin appendages, bone, and cartilage. The blood group substances present in red blood cells and tissue cells can be extracted with alcohol and other lipid solvents, but only in small amounts. The blood group substances occur also in water-soluble form, and in this respect all persons can be divided into two types, namely, secretors and nonsecretors. In secretors, blood group substances can be extracted with aqueous solutions from tissues and organs, especially salivary glands and gastric mucosa, and blood group substances are present in high concentration in secretions such as saliva, gastric juice, and semen. In nonsecretors water-soluble group substances are not demonstrable in the body fluids or secretions. About 75 to 80% of Caucasoids are secretors.

The fact that the blood group substances can be demonstrated in secretions such as saliva and semen is of considerable medicolegal importance. This makes possible the grouping of dried stains of saliva, for example, on cigaret stubs or postage stamps, and of seminal stains in rape cases. Because of the relatively high concentration of the blood group substances in such materials, the results are usually clear cut. The principle of the tests is to determine the capacity of saline extracts to inhibit specifically the reactions of anti-A and anti-B serums. This method has also been applied successfully to blood grouping of corpses when there was no blood to carry out direct agglutination tests, for example, by preparing saline extracts of muscle tissue. Errors can be avoided only by including suitable controls.

Tests on tissues and secretions are restricted to the A-B-O groups, because to date it has not been possible to demonstrate conclusively the presence in them of other agglutinogens, with the exception of the so-called Lewis factors.

*Lewis System.*—It has been known for a long time that occasionally human serums contain naturally weak isoagglutinins that give reactions unrelated to the A-B-O system. Most of these irregular isoagglutinins are of anti-P specificity, rare examples have been encountered of anti-M specificity, while most of the remainder remained unclassified. In view of the poor reactions given by these weak irregular agglutinins, which give the strongest clumping at low temperatures under conditions in which nonspecific cold agglutinins interfere, there was little interest in the natural irregular isoagglutinins until recently, when the Lewis factors were encountered. Two related Lewis factors have been found that are designated $Le^a$ and $Le^b$, respectively. Factor $Le^a$ has been studied much more extensively, and the striking fact has been established that adults who are $Le^a$-positive are almost invariably nonsecretors of the A-B-O group substances, while $Le^a$-negative persons are secretors. Many aspects of the Lewis blood factors, especially the relationship between $Le^a$ and $Le^b$, are still unclear, because of the difficulty of obtaining potent and specific reagents. Therefore this committee does not consider the Lewis system sufficiently well-established to be applied in medicolegal cases.

*Kell-Cellano Types (K-k).*—Antibodies for a blood property present in approximately 10% of Caucasoids have been found in occasional serums from mothers of erythroblastotic babies, as well as in serums from persons who have had hemolytic transfusion reactions. The symbol K has been selected for this factor after the patient, Kell, in whose serum the antibody was first detected. More recently an antibody was encountered in the serum of the mother of an erythroblastotic baby that gives reactions reciprocally related to the Kell factor. The new blood property, designated as the Cellano factor, after the patient, has an incidence of 99.8% among Caucasoids, and has been assigned the symbol k to indicate its reciprocal relationship to the Kell factor. When tests are done with both anti-K and anti-k serums, three types can be differentiated as follows: type KK in 0.2%; type Kk in 8.6%; and type kk in 91.2%. Experience with this blood group system is limited, due to the short period since its discovery as well as the difficulty of obtaining serums giving satisfactory reactions.

Many examples of anti-K serum have been found, but most of them are usable only with the conglutination [1] and antiglobulin methods. Only a single example of anti-k has been found so far; this particular serum is of high titer and gives good reactions by the saline agglutination technique. It is evident therefore that up to now the K-k system has necessarily been studied largely by workers specializing in blood grouping, though limited quantities of anti-K serum are commercially available. This committee therefore does not consider the K-k system sufficiently well established for medicolegal application at present, but it will probably become available in the near future.

*Other Blood Group Systems.*—Several additional independent blood group systems have been encountered, but they are of relatively little clinical importance because of the rarity with which they give rise to isosensitization. While from the medicolegal standpoint they are of limited value because of the difficulty of obtaining antiserums, a brief statement regarding them is necessary for the sake of completeness.

There appear to be a number of blood factors that are demonstrable only by the antiglobulin techniques. Of these, the most important is the so-called Duffy or $Fy^a$ factor. This blood property is important, because it has proved to be responsible for a number of serious intragroup hemolytic transfusion reactions. In the opinion of this committee, the blood properties demonstrable only with antiglobulin serum have no place at present in medicolegal work, because even with high titered antiserums it is often difficult to obtain clear cut reactions.

## BLOOD GROUPING TESTS FOR EXCLUSION OF PARENTAGE

During the past decade, as a result of the introduction of the Rh-Hr tests, the usefulness of blood tests in medicolegal cases has been enhanced considerably. The chief application of the

1. The term conglutination in relation to anti-K serum refers to clumping occurring only in the presence of plasma but not in saline medium.

blood tests has been in cases of disputed paternity involving babies born out of wedlock, but the tests are also frequently applied in divorce actions, and occasionally in cases of disputed maternity, as well as in instances of suspected interchange of infants in hospitals. When a man is falsely accused of paternity, he has better than a 50% chance of being exonerated by the

TABLE 6.—*Multiple Allele Theory of Inheritance of Blood Groups*

| Blood Group (Phenotype) | Corresponding Genotype |
|---|---|
| O | **OO** * |
| A | **AA, AO** |
| B | **BB, BO** |
| AB | **AB** |

* The boldface type in the tables corresponds to the italics in the text.

TABLE 7.—*Blood Groups in Parents and Children With Ten Possible Matings*

| Blood Groups of Parents | Possible Blood Groups in Children | Blood Groups Not Possible in Children |
|---|---|---|
| 1. O × O | O | A, B, AB |
| 2. O × A | O, A | B, AB |
| 3. A × A | O, A | B, AB |
| 4. O × B | O, B | A, AB |
| 5. B × B | O, B | A, AB |
| 6. A × B | O, A, B, AB | None |
| 7. O × AB | A, B | O, AB |
| 8. A × AB | A, B, AB | O |
| 9. B × AB | A, B, AB | O |
| 10. AB × AB | A, B, AB | O |

combined use of the A-B-O, M-N, and Rh-Hr tests, while more than 90% of cases of interchange of infants can be solved by such tests.

*Application of the A-B-O Groups.*—Recent studies have served to substantiate further the theory of the inheritance of the four blood groups by the triple allelic genes *A*, *B*, and *O*. Since every person has a pair of genes for every inherited characteristic, one gene of each pair being derived from the father and the other from the mother, there are six possible genotypes corresponding to the four blood groups (or phenotypes), (table 6).

The theory of multiple alleles leads to the following laws: 1. The agglutinogens A and B cannot appear in the blood of a person unless they are present in the blood of one or both

TABLE 8.—*M-N Blood Types*

| Phenotype | Genotype |
|---|---|
| M | **MM** * |
| N | **NN** |
| MN | **MN** |

* The boldface type in the tables corresponds to the italics in the text.

TABLE 9.—*Heredity of the Agglutinogens M and N with Six Possible Matings*

| Blood Groups of Parents | Possible Blood Groups in Children | Blood Groups Not Possible in Children |
|---|---|---|
| 1. M × M | M | N, MN |
| 2. N × N | N | M, MN |
| 3. M × N | MN | M, N |
| 4. MN × M | M, MN | N |
| 5. MN × N | N, MN | M |
| 6. MN × MN | M, N, MN | None |

of his parents. 2. A parent with blood of group AB cannot have a child with blood of group O, and a parent of group O cannot have a child of group AB. Ten different kinds of mating are possible, and, based on the laws just stated, the blood groups that can occur among the children of each of these matings are shown in table 7.

Studies on families with a total of more than 25,000 children have failed to disclose any contradictions to this theory that could not be explained either on the basis of an error in blood grouping or illegitimacy. Theoretically, mutations could give rise to exceptions to the theory once in about 50,000 to 100,000 cases. However, this rare possibility does not interfere with the medicolegal application of the tests, because when blood grouping tests are accurately performed there is hardly any other evidence that can approach in reliability the conclusions based on such blood tests.

Theoretically, the subgroups of A could also be applied in problems of disputed parentage. In practice, however, difficulties in technique, especially in subgrouping blood of newborn infants, interfere with the tests, so that this committee does not consider tests for the subgroups reliable enough for use in medicolegal cases.

*Application of the M-N Types.*—According to the generally accepted theory, the M-N types are inherited by a pair of allelic genes *M* and *N*. Thus there are three genotypes corresponding to the three M-N types (table 8). The theory leads to the following two laws: 1. Agglutinogens M and N cannot appear in the blood of a person unless they are present in the blood of one or both his parents. 2. A parent with blood of type M cannot have a child with blood of type N, and a parent with type N blood cannot have a child with type M blood. Six different types

TABLE 10.—*Inheritance of the Rh-Hr Blood Types*

| Phenotypes: 8 Rh-Hr Types * | Phenotypes: 18 Rh-Hr Types | Possible Genotypes † |
|---|---|---|
| rh | rh | **rr** ‡ |
| rh′ | rh′rh | **r′r** |
| | rh′rh′ | **r′r′** |
| rh″ | rh″rh | **r″r** |
| | rh″rh″ | **r″r″** |
| $rh_y$ | $rh_yrh$ | **r′r″** and **r⁰r** |
| | $rh_yrh'$ | **r⁰r′** |
| | $rh_yrh''$ | **r⁰r″** |
| | $rh_yrh_y$ | **r⁰r⁰** |
| $Rh_0$ | $Rh_0$ | **R⁰R⁰** and **R⁰r** |
| $Rh_1$ | $Rh_1rh$ | **R¹r**, **R¹R⁰**, and **R⁰r′** |
| | $Rh_1Rh_1$ | **R¹R¹** and **R¹r′** |
| $Rh_2$ | $Rh_2rh$ | **R²r**, **R²R⁰**, and **R⁰r″** |
| | $Rh_2Rh_2$ | **R²R²** and **R²r″** |
| $Rh_z$ | $Rh_zRh_0$ | **R¹R²**, **R¹r″**, **R²r′**, **R²r**, **R²R⁰**, and **R⁰r′** |
| | $Rh_zRh_1$ | **R²R¹**, **R²r′**, and **R¹r′** |
| | $Rh_zRh_2$ | **R²R²**, **R²r″** and **R²r′** |
| | $Rh_zRh_z$ | **R²R²** and **R²r′** |

* See footnote ‡ on table 3.

† **r** = **cde**; **r′** = **Cde**; **r″** = **cdE**; $r^y$ = **CdE**; **R⁰** = **cDe**; **R¹** = **CDe**; **R²** = **cDE**; **Rᶻ** = **CDE**.

‡ The boldface type in the tables corresponds to the italics in the text.

of mating are possible, and the M-N types that can occur among the children in each of these matings is shown in table 9 (see also table 11).

The fact that in tests on hundreds of thousands of persons not a single person has been encountered with blood lacking both the agglutinogens M and N is strong evidence in support of the theory. Moreover, in studies on families with a total of more than 10,000 children not a single contradiction has been encountered that could not be explained on the basis of illegitimacy. Especially noteworthy is the experience in medicolegal cases in Denmark, where in more than 20,000 mother-child combinations not a single type M mother with a type N child nor a type N mother with a type M child was encountered. In view of these observations this committee considers that the M-N tests are as reliable as the A-B-O tests, when carried out by qualified experts.

When the related S-s blood factors are taken into account, the situation becomes more complicated. Instead of a pair of allelic genes, one must postulate either a series of four allelic genes or closely linked gene pairs, such as *MS*, *Ms*, *NS*, and *Ns*. This results in 10 genotypes corresponding to the 9 possible phenotypes. In view of the scarcity of potent and specific serums, and the small number of studies that have been carried out to date, this committee feels that the S-s blood factors should not yet be applied routinely in medicolegal cases.

*Application of the Rh-Hr Types.*—One group of workers maintains that the Rh-Hr types are inherited by a series of

multiple allelic genes, while other workers favor the concept of linked gene triplets. Fortunately, this disagreement does not interfere with the medicolegal application of the Rh-Hr tests in cases of disputed parentage. At any rate, the mechanism of heredity is the same in principle as for the A-B-O groups and M-N types, except that the situation is complicated by the greater variety of blood factors and genes. For practical purposes it is sufficient to take into account only the eight alleles (or chromosomes), *r*, *r'*, *r''*, *r*$^{y}$, *R*$^{0}$, *R*$^{1}$, *R*$^{2}$, and *R*$^{z}$. These eight alleles and their equivalents in terms of C-D-E give rise to 36 genotypes that correspond to the 18 possible phenotypes shown in table 10. Theoretically, as many as 171 types of mating are possible, many of which have not yet been encountered because of the rarity of certain of the blood types. Due to the limitations of space, a table listing these matings cannot be reproduced here, but interested readers can find such tables giving the types among the children of 171 matings in the World Health Organization Bulletin [2] as well as in the recent book of Race and Sanger.[3]

For practical purposes the consequences of the genetic theory can be summarized in the following laws: 1. Blood properties $Rh_0$, rh', rh'', hr' and hr'' cannot appear in the blood of a person unless they are present in the blood of one or both his parents. 2. A parent who is rh'-negative (*cc*) cannot have an hr'-negative (*CC*) child; nor can an hr'-negative (*CC*) parent have an rh'-negative (*cc*) child. 3. A parent who is rh''-negative (*ee*) cannot have an hr''-negative (*EE*) child; nor can an hr''-negative (*EE*) parent have an rh''-negative (*ee*) child. (These laws can be expressed in terms of the C-D-E notations with the aid of tables 4 and 11.)

Recently a unique blood has been encountered that reacts only with anti-$Rh_0$ (anti-D) serum, but not with any of the other Rh-Hr serums. The existence of this remarkable blood suggests the possibility in certain combinations of exceptions to laws 2 and 3 in the preceding paragraph. However, to assume that a specific exclusion of paternity based on these laws is actually such an exception would be farfetched, because such unusual bloods, which must be extremely rare, can be detected by the expert.

Due to the complexity of the Rh-Hr tests and their more recent discovery, studies on the inheritance of these types have not been as extensive as in the case of the A-B-O groups or M-N types. To date studies have been carried out on families with a total of more than 5,000 children without a single exception to the genetic theory being encountered that could not be explained on the basis of illegitimacy. Moreover, in tests of several thousand mother-child combinations, not a single exception to the second law of the inheritance of the Rh-Hr types has been encountered. It should be pointed out that until recently most studies on the heredity of the Rh-Hr types have included only blood factors $Rh_0$, rh', rh'', and hr', and only a few studies have included also factors hr'' and rh$^{w}$, because serums of anti-hr'' and anti-rh$^{w}$ specificities are rarer and therefore more difficult to obtain.

In the opinion of this committee the Rh-Hr tests constitute a reliable addition to the other blood tests in cases of disputed parentage, provided, of course, that the person who carries out the tests is an expert who has had extensive experience with the performance of such tests. A complete test should include tests for the blood factors $Rh_0$, rh', rh'', and hr' and not merely for $Rh_0$ alone. Moreover, workers with special experience and who have the necessary antiserums may in selected cases include tests also for factors hr'' and rh$^{w}$.

*Application of Other Blood Factors.*—Under special circumstances, when suitable reagents are available, the expert may occasionally make use of some of the other blood group systems in problems of disputed parentage. Recently, for example, a case was encountered in which the putative father was not excluded by the "standard" A-B-O, M-N, or Rh-Hr tests, but nevertheless was proved to be innocent of the charge because the child's blood contained the rh$^{w}$ factor lacking from the blood of the putative father and mother. Tests for blood properties such as P, Fy$^{a}$, and Le not infrequently result in weak or indefinite reactions even under ideal conditions, and therefore this committee believes that these newer blood properties should not be applied in medicolegal cases for the present. Eventually, however, when reliable serums become generally available and adequate family studies have been performed, it will no doubt become possible to include tests for some of these newer blood factors in medicolegal work. As already mentioned, about 50% of falsely accused men can be exonerated by the A-B-O, M-N, and Rh-Hr tests at present, and when other blood factors such as S-s, K-k, and Fy$^{a}$ become usable, the chances of exclusion will be increased to more than 60%.

### BLOOD TESTS IN COURTS

Blood tests have now become a recognized and standard procedure in cases of disputed parentage in the American courts. A number of states have passed laws that give the court the power to order blood tests in any case in which the problem of paternity or maternity is relevant to the case. Such laws have been passed in New York, Wisconsin, Ohio, New Jersey, Maryland, South Dakota, North Carolina, Maine, and Pennsylvania. In states where statutes have not been passed there is nothing to prevent the performance of the tests by mutual consent of the parties involved, and, once significant results have been obtained, they are always admissible in evidence. Since the tests can be used only to exclude paternity and cannot be used to prove paternity, to avoid misunderstanding the tests should be admissible as evidence only when they exclude paternity.

TABLE 11.—*Blood Factors rh' (C) and hr' (c) in Parents and Children**

| Mating | Percentage of Children with Each Phenotype: rh' CC | rh hr' Ce | hr' ee |
|---|---|---|---|
| CC × CC | 100 | 0 | 0 |
| ee × ee | 0 | 0 | 100 |
| CC × ee | 0 | 100 | 0 |
| CC × Ce | 50 | 50 | 0 |
| ee × Ce | 0 | 50 | 50 |
| Ce × Ce | 25 | 50 | 25 |

* This table is analogous to that used for the three M-N types (table 2), M being replaced by C (rh') and N by e (hr'). Similarly, the table can be used to show the hereditary transmission of other contrasting blood factors, namely, E-e (rh''-hr''), S-s, and K-k.

By now there must have been several thousand cases in which blood tests have been carried out in cases of disputed parentage in courts of this country. A summary of the statistics for this country up to 1943 can be found in the book by Sidney B. Schatkin.[4] In the court of Special Sessions of New York City the tests have become routine in paternity cases involving children born out of wedlock whenever the defendant denies paternity. When the tests exclude paternity, they are repeated independently by another expert, and, when, as has invariably been the case, the findings are confirmed, the practice of that court has been to acquit the defendant of the charge. If the complainant refuses to submit to the blood tests ordered by the court, the case is dismissed without prejudice and can be reopened at any time that the woman is willing to submit to the blood tests. Thus, the introduction of blood tests has caused courts to change fundamentally their attitude towards paternity proceedings.

While the results of the blood tests are admissible when they exclude paternity, the findings are not binding on the court. That is as it should be. It is the duty of the court to examine the evidence in order to convince itself that the tests have been properly carried out by qualified experts. When the court feels that adequate safeguards have not surrounded the tests, it should

2. Wiener, A. S.: Heredity and Nomenclature of the Rh-Hr Blood Types, Bull. World Health Organ. **3**: 265, 1950.

3. Race, R. R., and Sanger, R.: Blood Groups in Man, Springfield, Ill., Charles C Thomas, Publisher, 1950.

4. Schatkin, S. B.: Disputed Paternity Proceedings, ed. 2, New York City, Matthew Bender and Company, 1947.

order the tests to be repeated by an independent expert, and there is nothing to prevent shipping of the blood to another part of the country if there is no other qualified expert in the state in which the case is being tried. In divorce and separation actions the court often takes into account other considerations, aside from the scientific results of the blood tests. To base decisions entirely on the results of the blood tests in such cases may harm an innocent third party by bastardizing the child. For this reason in a number of cases the court has refused to grant a divorce on the basis of the blood tests alone. In uncontested divorce actions, however, when the blood tests exclude paternity, the court has no choice but to grant the decree.

In other English speaking countries, namely, England, Canada, and Australia, blood tests have been applied only to a very limited extent. In European countries the blood tests have been applied more extensively in Germany, Denmark, and Sweden, where the blood tests are used routinely in all paternity procedures, the tests being carried out in government-supported laboratories. In Denmark, for example, the A-B-O and M-N tests have been applied in more than 20,000 cases up to the present time.

For more than five years the Rh-Hr tests have been applied routinely in this country along with the A-B-O and M-N tests in cases of disputed parentage. By now, in fact, the Rh-Hr tests must have been used in approximately 2,000 cases. As is to be expected, the first few cases in which an exclusion was based solely on the results of the Rh-Hr tests, when the A-B-O and M-N tests were inconclusive, were contested. The first decision based solely on the results of Rh-Hr tests is that of Justice Jacob Pankin [5] who granted a divorce in a case in which the putative father belonged to type AB MN rh, the mother to type A M $Rh_1Rh_1$ and the child to type A M $Rh_1Rh_2$. Since that time the results of the Rh-Hr tests have been accepted routinely by the Court of Special Sessions in New York City whenever they excluded paternity, and are considered to have equal weight with the results of the A-B-O and M-N tests. To date the Rh-Hr tests have been applied in relatively few medicolegal cases outside of the United States.

### QUALIFICATIONS OF EXPERTS

It hardly seems necessary to point out that it is essential that the person who undertakes to perform blood tests in medicolegal cases be a specialist in the field, that is, he should preferably be a person with an M.D. degree or with comparable academic training such as the possession of a Ph.D. degree, who has acquired extensive experience in the entire field of study of individual blood differences. In this connection, there is need for formation of a special panel of persons qualified to perform blood grouping tests in medicolegal cases of disputed parentage. In the meantime it is possible to distinguish most of the experts by the quality of their publications on the subject. The expert will have available at all times a large panel of persons of representative blood groups and types from whom he can obtain blood samples to serve as positive and negative controls for the various antibodies employed. The results of the control tests should be included in the final report. It is reprehensible to accept a case of disputed paternity and then purchase the necessary testing serums in order to obtain one's first experience with the delicate M-N and Rh-Hr tests with a problem of this nature. These tests have numerous pitfalls, and accurate results can be obtained only by specialists with regular and continuous experience with these tests. Moreover, the qualified expert must not only be a capable immunologist but also be well versed in genetics.

The policy followed in New York City appears to be sound, and is also the least objectionable, since it does not interfere with the principle of free choice of physicians. After consultation with the New York Academy of Medicine, the Court of Special Sessions drew up a list of qualified experts available in the metropolitan area. When any party to an action requests the blood tests, his attorney is permitted to select any physician whose name is included on the list of experts. In addition to this precaution, whenever the blood tests exclude paternity, independent blood tests are carried out by another expert on the list.

Blood grouping evidence is unique in that when properly performed it is completely objective and, moreover, the evidence cannot be destroyed as long as the parties concerned are alive. A person's A-B-O group, M-N type, and Rh-Hr type never change throughout his lifetime, and the tests can be repeated at any time merely by drawing a fresh sample of blood. In fact, with the efficient air transport service now available, when it is desirable, blood can be shipped half way around the world to be tested by an expert thousands of miles away.

### EXAMINATION OF BLOOD AND SECRETION STAINS

Occasions when it is desirable to examine dried blood stains in medicolegal cases are less common than cases of disputed parentage. Such problems arise most frequently in murder cases, for example, when a suspect is found with blood stains on his clothing for which he cannot satisfactorily account. In such cases the blood tests are of value only for purposes of exclusion; thus an alibi that the blood stains contain the suspect's own blood can be refuted if it can be shown that the stains belong to a different blood group. If the blood stain is of the same blood group, on the other hand, this would not necessarily indicate that the alibi is true.

In the rare cases in which the stains are still wet and fresh when found, blood suspensions can be prepared and classified in the usual way for the A-B-O, M-N, and Rh-Hr types. As a rule, however, the blood stains are dried when found, in which case special methods of testing must be applied. It is first necessary to establish whether the stains actually contain human blood by suitable chemical and precipitin tests. Blood grouping tests on dried blood when successful are limited to the four A-B-O groups. In addition, blood stains in medicolegal cases are frequently on soiled garments and are often contaminated by bacteria or sweat and other body secretions. Putrefied or decomposed blood does not yield reliable results, and even with well-preserved stains, the material is often insufficient in amount. The qualified investigator, however, will refrain from making any report at all unless the reactions he obtains are absolutely clear and decisive. For the examination of blood stains, particularly, it is essential to have well-trained workers, since those not thoroughly familiar with the field seem to have a tendency to offer an opinion in every case even though the results may not warrant this. With regard to other stains such as semen and saliva, the same general principles apply.

The problem has been solved in New York City by the creation of the laboratory of bacteriology and serology in the office of the chief medical examiner. The department is run by specially trained persons who are selected by Civil Service examinations. These persons are responsible for investigating the bacteriologic and serologic aspects of all sudden and unexplained violent deaths. In such cases the blood of the deceased is routinely tested at the postmortem examination for its blood group, M-N type, and Rh type, and that information is filed away for subsequent use in the event that at a later date a blood stain has to be tested for comparison with the blood of the deceased. When any stains of blood or secretions are found that may have any bearing on the problem, they are brought to the laboratory by a detective for examination. As a result of the routine processing of such stains and blood obtained postmortem, it has been possible to solve a number of puzzling murder cases, as well as hit-and-run automobile cases.

A similar laboratory has been set up by the Federal Bureau of Investigation, U. S. Department of Justice, Washington 25, D. C., for the examination of blood stains and secretions in criminal cases. This committee recommends that similar laboratories be set up in other states and large cities where there are qualified persons available to carry out the examinations. If qualified experts and facilities are not available locally, contact should be made with the Federal Bureau of Investigation's laboratory for aid in solving such problems. Certainly difficult problems of this nature should not be entrusted to police sergeants or other persons who have limited or no background of training in this difficult field.

5. Saks vs. Saks, New York Law Journal **118**: 147, 1947.

V 14
1952

RECOMMENDATIONS

This committee recommends that this report be distributed to proper medical and legal authorities in order to familiarize them with the facts available concerning the medicolegal application of blood grouping tests. In this way it is hoped that this knowledge will become more generally available and the maximum use be made of the tests in courts of law, in order to substitute scientific facts for opinion. Moreover, the committee recommends that the blood group test bills be introduced into the legislatures of those states that still do not have laws enabling courts to order blood grouping tests in cases where the results of such tests are pertinent to the issue.

ADDENDA

*Prepared by the Bureau of Legal Medicine and Legislation, April, 1952.*

STATUTES

In the following states, when paternity is an issue, testimony concerning the results of blood grouping tests is made admissible in evidence by statute when the results of such tests disprove paternity.

*Maine.*—Laws 1939, c. 259 (adding sec. 12 to Rev. Stat. (1930) c. 111).

*Maryland.*—Laws 1941, c. 307 (adding sec. 17 to Anno. Code, 1939 ed., art. 12).

*New Jersey.*—Laws 1939, c. 221 (adding secs. 3 & 4 to Rev. Stat. 1937, title 2, subtitle 11, c. 99).

*New York.*—Civil Prac. Act, sec. 306-a, as amended by *Laws 1942*, c. 893; Code of Crim. Proc., sec. 684-a; Dom. Rela. Laws, Sec. 126-a; N. Y. City Crim. Cts. Act, sec. 67-1-a; *Laws 1942*, c. 761, sec. 1, (adding sec. 34 to *Laws 1933*, c. 482, which established the domestic relations court of the City of New York).

*North Carolina.*—Laws 1945, c. 40.

*Ohio.*—Page's General Code, Anno. (1942 Supp.) secs. 12122-1, 12122-2.

*Pennsylvania.*—Acts 1951, Act No. 92.

*South Dakota.*—Code 1939, sec. 36.0602.

*Wisconsin.*—Stat. 1941, secs. 166.105 and 325.23.

COURT DECISIONS

*California.—Arais v. Kalensnikoff (Calif.), 67 P. (2d) 1059; J. A. M. A.* **110:** *466 (Feb. 5) 1938; 74 P. (2d) 1043; J. A. M. A.* **111:** *566 (Aug. 6) 1938.*—Pointing out that medical profession accepts the results of Landsteiner test as conclusive where it shows nonpaternity, the District Court of Appeals, California, in an appeal from bastardy proceedings where parties voluntarily submitted to blood grouping tests, held the tests to be such a matter of science and common knowledge as to warrant taking judicial notice of the conclusiveness of the tests where nonpaternity is demonstrated.

On the final appeal, the Supreme Court of California said that the results of blood grouping tests are expert opinion and held that when there is conflict between scientific and other testimony as to facts the trial court or jury must determine the relative weight of the evidence. (The judgment of the trial court, holding that the defendant was the father of the child, was affirmed.)

*Berry v. Chaplin, 169 P. (2d) 442 (Calif. 1946); J. A. M. A.* **132:** *498 (Feb. 15) 1947.*—The Supreme Court of California held that in case of disputed paternity the results of blood grouping tests, voluntarily made, are not conclusive evidence, and if the results of this scientific evidence conflict with other evidence the trial court or jury must determine the relative weight of each.

*Federal (D. C.).—Beach v. Beach, 114 Fed. (2d) 479 (1940); J. A. M. A.* **116:** *2337 (May 17) 1941.*—In divorce action, where questions of adultery and paternity of child were at issue, a request for blood grouping test was held properly granted by the U. S. District Court for the District of Columbia because the test is procedural and does not affect any substantive right. Court held further that the child was a party to the action and the results of the tests were as much to its benefit as to the mother's and putative father's.

*Maine.—Jordan v. Davis, 57 A. (2d) 209 (Maine, 1948); J. A. M. A.* **137:** *488 (May 29) 1948.* In the face of unrefuted evidence, in a bastardy proceeding that plaintiff and defendant had intercourse on a certain date, that a child was born within the normal period of gestation thereafter, and, in the absence of any evidence that anyone else could be the father of the child, it was held by the Supreme Judicial Court of Maine that blood grouping tests are not conclusive but rather that the trial court or jury has the right to hear and weigh all the evidence and to reject any evidence the accuracy of which it doubts.

*Jordan v. Mace, 69 A. (2d) 670 (Maine 1949); J. A. M. A.* **142:** *750, (Mar. 11) 1950.*—Appeal from order denying new trial after jury had found defendant to be father of twins born to plaintiff. Eleven tests of the blood of the plaintiff, twins and defendant, excluded the defendant as the father. The Supreme Court said that biologic law goes beyond the opinion of an expert and that the jury may not give such weight as it may desire to such biologic law. The jury's duty is to determine whether conditions exist which made the biologic law applicable and whether the tests were properly made. Therefore the order denying a new trial was reversed.

*New Jersey.—Bednarik v. Bednarik, 16 A. (2d) 80 (N. J., 1940); J. A. M. A.* **119:** *102 (May 2) 1942.*—In an action for divorce, where adultery and paternity of child were issues, it was held by the Court of Chancery of New Jersey that a general statute authorizing blood grouping tests where paternity is an issue did not repeal a statute prohibiting husbands and wives giving evidence for the other in actions for divorce on ground of adultery. For this reason it was held that testimony concerning the results of such tests was not admissible in this type of action. The court added that to compel a person to submit against her will to a blood grouping test is a serious assault and battery.

*Anthony v. Anthony, 74 A. (2d) 919 (N. J., 1950); J. A. M. A.* **144:** *1117, (Nov. 25) 1950.*—In a divorce case there was a motion by defendant to require plaintiff, child and defendant to submit to blood grouping tests. The supreme court, chancery division, held that the accuracy and worth of such tests have been abundantly shown. The circumstances being clearly within the purview of the statutory authority, the court granted the requested motion.

*Cortese v. Cortese, 76 A. (2d) 717 (N. J., 1950) J. A. M. A.* **145:** *755 (Mar. 10) 1951.*—Appeal following refusal of trial court to grant defendant's motion to require blood tests. The superior court, appellate division, held that reliability of tests had been established and that statute permitted their use. Trial court ruling was reversed.

*New York.—Taylor v. Diamond, 269 N.Y.S. 799 (N. Y., 1934).*—Here it was held, in a bastardy proceeding, that the Court of Special Sessions, New York, may not in the absence of statutory authority, compel parties to the action to submit to blood grouping tests.

*Beuschel v. Manowitz (N.Y.), 271 N.Y.S. 277; 272 N.Y.S. 165; J. A. M. A.* **104:** *344 (Jan. 26) 1935.*—Where defendant was sued for damages for carnal assault and subsequent birth of child, his request for blood grouping test was held to be relevant to the issues and the results of the test were held by The Supreme Court of Kings County, New York, to be trustworthy and testimony thereof to be admissible in evidence.

However, the appellate division of Supreme Court ordered reversal on the grounds that the tests do not establish paternity but rather the probability of nonpaternity; that the child is not a party to the action; and that the child's welfare is not involved to the extent that chancery jurisdiction of court may be invoked.

*Harding v. Harding, 22 N.Y.S. (2d) 810 (N.Y., 1940); J. A. M. A.* **116:** *2337 (May 17) 1941.*—In an action for divorce, where adultery and paternity of child were issues, testimony concerning the results of blood grouping tests made pursuant to statute, was held by the Domestic Relations Court of the City of New York, Family Court Division, Queens County, New York, to be of no more credibility than any other evidence because the tests are highly complex and susceptible to errors.

*Schulze v. Schulze, 35 N.Y.S. (2d) 218 (N.Y., 1942); J. A. M. A.* **120:** *1160 (Dec. 5) 1942.*—In action for divorce, where adultery and paternity were issues, where physician testified that result of blood grouping tests made pursuant to statute excluded husband as father of child, it was held by the Supreme Court of Monroe County, New York, that to deny a decree of divorce to husband would be tantamount to holding the testimony of physician not worthy of belief or that the procedure for blood grouping tests as authorized by statute is futile in so far as having any probative value is concerned.

*Saks v. Saks, 71 N.Y.S. (2d) 797 (N.Y., 1947); J. A. M. A.* **136:** *203 (Jan. 17) 1948.*—In a case of disputed paternity where parties voluntarily submitted to blood grouping tests and where statute permits testimony on blood tests to be admitted in evidence and to be given the same consideration as any other type of testimony it was held by the Domestic Relations Court of the City of New York, Family Court Division, King's County, New York, that if such testimony is believable the court cannot reject it. [Note: The court, in this case, gave recognition to the dependability of the Rh factor in human blood in the determination of paternity.]

*Commissioner of Welfare ex rel. Tyler v. Costonie, 97 N.Y.S. (2d) 804 (N.Y., 1950) J. A. M. A.* **144:** *573 (Oct. 14) 1950.*—Appeal from order entered finding defendant to be father of child in question. The blood tests definitely excluded him. The supreme court, appellate division, first department, held that a blood test exclusion report is something more than a mere opinion and should be recognized and given effect. Here there were some doubts as to the making of the test itself, however. The court therefore reversed the judgment in favor of the mother but granted a new trial on the question of the accuracy of the procedure used in making the test.

*Scalone v. Scalone, 98 N.Y.S. (2d) 167 (N.Y., 1950) J. A. M. A.* **144:** *708 (Oct. 21) 1950.*—Action for declaratory judgment to determine paternity of the child as between first and second husband of the plaintiff. Expert testimony based on blood grouping tests indicated that the first husband could not have been the father. The supreme court, special term, Bronx County, said that medical testimony is not conclusive but must be given

credence to the extent that it is trustworthy and convincing. No counter medical proof was offered. The court therefor accepted the results of the tests and held that the first husband was not the father.

*Ohio.—State v. Wright (Ohio), 17 N.E. (2d) 428; J. A. M. A.* **113:** *970 (Sept. 2) 1939.*—In a bastardy proceeding, the Court of Appeals of Franklin County, Ohio, held that when an expert, whose qualifications are not questioned, makes a blood test of the blood of the mother, child and putative father and testifies as to the results of those tests such testimony is competent evidence and may be introduced for whatever value it may have to prove the nonpaternity of the father.

*State ex rel. Slovak v. Holod, 24 N.E. (2d) 962 (Ohio, 1939); J. A. M. A.* **117:** *64 (July 5) 1941.*—The Court of Appeals, Guernsey County, Ohio, held that the result of blood grouping tests, offered by alleged father of illegitimate child and which disclosed that alleged father could not be the father should be admitted along with other evidence for whatever weight it might have to prove nonpaternity.

*State ex rel. Freeman v. Morris (Ohio, 1951) 102 N.E. (2d) 450.*—In a bastardy proceeding, the Supreme Court pointed out that the statute permits use of results of blood tests when the tests establish nonpaternity but not when they disclose a mere possibility of paternity. Where the findings of the expert are so broad and general that they can not properly be applied in the determination of paternity, evidence of such findings should not be admitted in evidence.

*Pennsylvania.—Commonwealth v. Zamorelli, 17 Pa. D. & Cir. R. 229 (Pa., 1931).*—In bastardy case where defendant was found guilty despite unrefuted evidence, based on blood grouping tests, that he could not be the father of the child, the County Court of Fayette County, Pennsylvania, on appeal set aside the verdict and ordered a new trial because of the contrary, uncontroverted expert testimony based on the blood grouping test.

*Commonwealth ex rel. Antoinette Visocki v. Frank Visocki, Alleghany County Court, Pa. (1935). (Case cited by C. W. Muehlberger, Ph.D. in Blood Grouping Tests in The Medicolegal Determination of Non-paternity. Illinois Medical Journal* **69:** *154-158(Feb.) 1936.*—In an action for nonsupport, defended on the ground that the husband was not the father of the child and where blood grouping tests established that fact, the Alleghany, Pa., County Court held that the positive, aggressive, circumstantial and particular testimony of witnesses for the husband sustained his contention.

*Commonwealth v. English (Pa.), 186 A. 298; J. A. M. A.* **108:** *1743 (May 15) 1937.*—The trial court's refusal to order blood grouping test in bastardy proceedings was sustained by Superior Court of Pennsylvania because the test does involve some danger and is something more than a physical examination. Further, the court found no proof in the record as to the scientific accuracy of tests and held that they have not attained such standing as to justify a court taking judicial notice of their value.

*Commonwealth v. Krutsick, 30 A. (2d) 325 (Pa., 1943); J. A. M. A.* **131:** *1528 (Aug. 31) 1946.*—In bastardy proceedings the refusal of the trial court to order blood grouping tests was sustained by the Superior Court of Pennsylvania on the grounds that if the test was made forcibly against the will it would be a serious assault and battery. The court said that until the tests have, through the progress of science, been so perfected as to afford decisive proof as to paternity, both affirmative and negative, the refusal of a witness to submit herself and her child to the tests should not operate against her or be used in evidence to weaken the credibility of her evidence.

*South Dakota.—State v. Damm (S.D.) 252 N. W. 7; 266 N. W. 667; J. A. M. A.* **108:** *144 (Jan. 9) 1937.*—Refusal by trial court of defendant's request for blood grouping test sustained by Supreme Court of South Dakota on the ground that it does not appear from the record in this case "that modern medical science is agreed upon the transmissibility of blood characteristics to such an extent that it can be accepted as an unquestioned scientific fact that, if the blood groupings of the parents are known the blood group of the offspring can necessarily be determined, or that if the blood groupings of the mother and child are known, it can be accepted as a positively established scientific fact that the blood group of the father could not have been a certain specific characteristic group."

On a rehearing the Supreme Court emphasized that its ruling was predicated on the record made in the trial court, asserting that it believes the reliability of such tests is universally conceded by competent scientific authorities. It held that trial courts, in their reviewable discretion, have inherent power to order the taking of such tests in cases where paternity is the issue and where the results of the test may be helpful in ascertaining the truth.

*State ex rel. Wollock v. Brigham, 33 N.W. (2d) 285 (S.D. 1948) J. A. M. A.* **139:** *544 (Feb. 19) 1949.*—Appeal to set aside order of trial court requiring husband to submit to a blood test "to determine paternity of said child." Supreme Court said that such tests may in some instances prove nonpaternity, but they never establish paternity. The wife's application was predicated on an erroneous assumption. The trial court's order was therefore set aside.

### ARTICLES IN LEGAL PERIODICALS

The admissibility of blood grouping tests in disputed paternity cases has been discussed in legal periodicals on many occasions. The Bureau of Legal Medicine and Legislation has compiled a list of about one hundred references to such discussions, which can be obtained on request.

## MEDICAL MOTION PICTURES

**Cerebral Palsy-Methods of Ambulation:** 16 mm., color, sound, showing time 20 minutes. Sponsored by New York State Association for Crippled Children, Dr. George D. Deaver, New York University College of Medicine, Technical Adviser. Produced in 1951 by Medicolor, Inc., New York. Procurable on purchase from New York State Association for Crippled Children, 257 Fourth Street, New York, and on loan (rental charge $3.50.) from National Society for Crippled Children and Adults, 11 South LaSalle Street, Chicago 3.

This picture opens with brief statements by Judge Knoeppel of the New York State Association for Crippled Children, Inc. and Dr. George Deaver, director of the Lenox Hill Cerebral Palsy Center. Filmed at the Lenox Hill Pre-School Cerebral Palsy Clinic, it shows the methods and equipment used at the clinic in teaching pre-school cerebral palsied children to roll, crawl, sit, kneel, stand, and finally to walk. An emphasis is placed on walking techniques with scenes on bracing and crutch walking. It demonstrates painstakingly developed techniques and some ingenious appurtenances in the treatment of children with cerebral palsy. As the title implies, it is concerned mostly with ambulation. The film is intended primarily for use in specialized instruction of physical therapists, nurses, and medical students; however, it will also be of interest to the general public. The photography and narration are satisfactory.

**A Functional Study of the Tongue and the Velo-Pharyngeal Musculature:** 16 mm., color, sound, showing time 7 minutes. Prepared by Dr. Daniel A. Listiak, Professor of Dentistry, University of Minnesota. Sponsored by the Speech Clinic, Speech Department, and the School of Dentistry, University of Minnesota. Produced in 1951 by and procurable on purchase ($85.00) from Audio-Visual Education Service, University of Minnesota, Minneapolis.

The subject shown in this film has an opening in the right anterior portion of the face above the level of the palate. The palate is absent, and a prosthetic appliance of clear plastic has been supplied, so that the action of the muscles in the velopharyngeal area is shown. The tongue can be seen through the appliance. The activity of the visible part during speech, swallowing, blowing, and whistling is illustrated. Two of the most important observations are the activity of the levator palati and the concavity of the dorsum of the tongue in speaking activity. Unfortunately, there are some reflections from the appliance and visibility of tongue activity is not too clear; however, within the limits of the case used, the film shows as much as possible.

This film is an excellent contribution. If other workers would report their cases as carefully, the sum total would lead to a much better understanding of the vegetative and speaking activity of the oral and pharyngeal cavities. The sound and photography are excellent. This film should be observed by all medical and lay specialists who deal with the cleft palate cases or with bulbar poliomyelitis cases. It should be seen by all students in connection with their learning of the velopharyngeal activity.

**Total Hysterectomy:** 16 mm., color, silent, showing time 15 minutes. Prepared by John M. Fernald, M.D., Los Angeles. Produced in 1951 by and procurable on rental or purchase from Billy Burke Productions, 7416 Beverly Blvd., Hollywood 36.

The stated purpose of this film is to teach technical steps in the operative procedure with emphasis on safeguards carried out during the procedure. The surgical technique is essentially good, and the anatomy is well defined. The hemostasis as illustrated in the film is excellent. One cannot take exception to the transverse incision since this is a matter of personal choice. There was no reason given for examining the intestines so extensively. This procedure contributes to an increased possibility of infection and increased possibility of shock and subsequent distention. With the exception of this sequence, the surgical technique is good. The color photography is excellent. The film would be of interest to gynecologists and general surgeons.

V 14
1952

# MEDICAL LITERATURE ABSTRACTS

## UNITED STATES

### A.M.A. Arch. Surgery, Chicago

64:135-268 (Feb.) 1952

Mediastinal Gastric Cyst: Successful Excision in an Eight-Week-Old Infant. M. H. Williams and J. F. Johnson.—p. 138.
Use of Preserved Tissues in Orthopedic Surgery. F. P. Kreuz, G. W. Hyatt, T. G. Turner and C. A. L. Bassett.—p. 148.
Local Hemostasis in Hemorrhagic Syndrome of Irradiation. R. Bourdeau and H. Laufman.—p. 154.
Bleeding from Nipple. H. G. Hollenberg.—p. 159.
*Treatment of Biliary Dyskinesia with Special Reference to Sphincterotomy. L. J. Lester and R. Colp.—p. 168.
Cardiac Massage in Treatment of Arrest of Heart: Study of 350 Cases, with Two Original Case Reports. F. Cole.—p. 175.
Coexisting Lymphosarcoma and Ulcer-Carcinoma of Stomach. J. Rabinovitch, B. Pines and D. Grayzel.—p. 185.
Effect of Exalto-Mann-Williamson Procedure on Gastric Secretion. E. H. Storer, H. A. Oberhelman Jr., E. R. Woodward and others.—p. 192.
*Pulmonary Embolism Following Venous Ligation. W. G. Anlyan, F. H. Campbell, W. W. Shingleton and C. E. Gardner Jr.—p. 200.
Cysts of Parathyroid: Report of Three Cases Clinically Simulating Nodular Goiter. D. B. Maxwell, R. C. Horn Jr., and J. E. Rhoads. —p. 208.
Intravenous Sodium 5-Allyl-5-(1-Methylbutyl) Barbiturate for Hypnosis During Nitrous Oxide Anesthesia. V. K. Stoelting and J. P. Graf. —p. 214.
Follow-Up Studies Following Total Pelvic Viscerectomy. E. S. Brintnall. —p. 221.
Recurrent Cancer of Common Bile Duct and Periampullary Region. R. J. Booher and G. T. Pack.—p. 224.
Effects of Sympathectomy Alone and Combined with Gastrectomy on Gastric Secretory Responses: Experimental Study on Esophageal-Fistula Dogs with Normal Stomachs. C. W. Howe, W. J. Porell and P. F. Ware.—p. 238.
Endotracheal Catheter Gun. E. B. Emerson Jr.—p. 250.
Traumatic Chylothorax. E. Hoffman, J. L. Ivins and H. M. Kern.—p. 253.

**Sphincterotomy in Biliary Dyskinesia.**—The term biliary dyskinesia indicates a disturbance in the normal kinetics of bile flow, the important regulating mechanism of which is the sphincter of Oddi. The symptomatology of biliary dyskinesia is almost identical with that of gallbladder disease. In some persons the relation of "gallbladder" attacks to nervous tension states or menstruation and the relief obtained by antispasmodics may suggest the diagnosis. In others a characteristic episode may be precipitated by a small dose of morphine, which induces a sphincter spasm. The diagnosis is often made by exclusion and occasionally only by surgical exploration. Biliary dyskinesia is an essential feature of the postcholecystectomy syndrome, which usually may be treated satisfactorily by medical measures. When operation becomes mandatory, an organic cause is usually found. This may be a residual stone in the common duct or stump of the cystic duct. Pancreatitis is rarely a cause. When no organic disease is found, the symptoms may be ascribed to dyskinesia of the sphincter of Oddi. Division of the sphincter will relieve the symptoms in the majority of patients. Endocholedochal sphincterotomy was performed in 21 cases, with follow-up for from 3 to 14 years. Because of recurrence of symptoms in five instances, probably owing to incomplete division of the sphincter, and a mistaken diagnosis in three others, this procedure has now been replaced by transduodenal sphincterotomy. The latter has been employed for the past three years, with encouraging results.

Periodicals on file in the Library of the American Medical Association may be borrowed by members of the Association or its student organization and by individual subscribers, provided they reside in continental United States or Canada. Requests for periodicals should be addressed "Library, American Medical Association." Periodical files cover only the last 11 years, and no photoduplication services are available. No charge is made to members, but the fee for other borrowers is 15 cents in stamps for each item. Only three periodicals may be borrowed at one time, and they must not be kept longer than five days. Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

**Pulmonary Embolism Following Venous Ligation.**—Of 50 patients with thromboembolic disease, 43 were treated with anticoagulants only, and among these no pulmonary emboli occurred. However, five of the seven patients who underwent venous ligations had pulmonary emboli from 2 to 15 days after ligation, with one fatality. Anlyan and associates suggest that the best way of preventing fatal pulmonary emboli in patients who have undergone transurethral resection and in whom thromboembolic disease develops is ligation of the inferior vena cava. Inferior vena cava ligation should be considered also if pulmonary embolism develops despite adequate heparin therapy, although the authors never found this necessary. They question whether ligation of the superficial femoral or the common femoral veins is ever advisable in thromboembolic disease, not only because of the poor results they obtained, but also because they feel that to ligate a phlebitic vein at its proximal end when it is already taxed by incompetent valves and areas to recanalization is an added insult. Anticoagulation therapy appears to be the treatment of choice in thromboembolic disease. When facilities for prothrombin determinations are not available, administration of heparin in repository form once a day intramuscularly is preferable to ligation of the superficial femoral veins.

### American Journal of Clinical Pathology, Baltimore

22:91-200 (Feb.) 1952

Growth of Tubercle Bacilli on Fractions of Egg. H. J. Corper and A. Chan.—p. 93.
Studies on Clot Density. B. W. Volk, S. Losner, M. Jacobi and S. S. Lazarus.—p. 99.
Significance of Granulomatous Lesions in Bone Marrow Aspirations. G. L. Pease.—p. 107.
Pancreatic Lesions Associated with Cirrhosis of Liver. J. C. Stinson Jr., A. H. Baggenstoss and C. G. Morlock.—p. 117.
Absolute Lymphocyte Count and Serum Inorganic Phosphorus After Glucose Administration in Diabetic Patients. S. S. Lazarus, B. W. Volk, M. Jacobi and M. Y. Gilady.—p. 127.
Incidence of Acid-Fast Pigment (Ceroid) in Aortic Atherosclerosis. R. C. Burt.—p. 135.
Prothrombin Consumption Test: Simplified Technic. O. H. Dreskin. —p. 140.
Influence of Calcium on Adsorption of Prothrombin by Seitz Filters. M. Stefanini, L. Salomon, J. B. Chatterjea and J. H. Silverberg. —p. 146.
*Hemorrhagic Diathesis Due to Ac-Globulin Deficiency. M. J. Brennan, R. W. Monto and H. C. Shafer.—p. 150.
Microhematocrit Method and Its Evaluation. M. E. Shils, M. Sass and L. Goldwater.—p. 155.
Perforating Suppurative Aortitis Associated with Idiopathic Cystic Medial Necrosis: Report of Case. M. J. Williams.—p. 160.

**Hemorrhagic Diathesis Due to Ac-Globulin Deficiency.**—Brennan and associates point out that H. P. Smith in 1941 stated that prothrombin conversion rates are raised not only by increases in thromboplastin concentration but also by other blood conversion factors. A number of investigators studied such conversion catalysts: Owren identified such a substance as factor 6; Ware and Seegers gave to their material the functional name of accelerator (ac) globulin; and Alexander and de Vries termed their accelerator substance "serum prothrombin conversion accelerator." The identity of at least some of the materials described as accelerators of prothrombin conversion by various investigators seems probable but is not yet certain. Their relationship to the elements of Quick's "prothrombin-complex" has not been determined. Owren in 1947 was the first to report an instance of hemorrhagic disease due to selective deficiency of a prothrombin conversion factor. Since the condition is apparently rare and there is interest in the relation of convertor proteins to hemostasis at present, Brennan and associates present an instance of hemorrhagic diathesis due to a selective deficiency of ac-globulin. The similarity of the findings to other instances in which a deficiency of factor 6 has been shown to be the cause of a bleeding tendency indicates that ac-globulin and factor 6 are identical. The hemostatic defect was refractory to oral and parenteral administration of synthetic vitamin K but responded to transfusion of 100 ml. of fresh whole blood. Prothrombin

times were prolonged though variable and falsely indicated prothrombin deficiency. Evaluation of variations of prothrombin concentration cannot properly be made by employing the single stage procedure, which neglects the role of prothrombin conversion accelerators.

## American Journal of Human Genetics, Baltimore

**3:**195-302 (Sept.) 1951

New Syndrome Combining Developmental Anomalies of Eyelids, Eyebrows and Nose Root with Pigmentary Defects of Iris and Head Hair and with Congenital Deafness. P. J. Waardenburg.—p. 195.
Statistical Problems Posed by Waardenburg's Data on Dystopia Canthorum and Associated Anomalies. C. W. Cotterman.—p. 254.
*Genetic and Statistical Study of Psoriasis. A. G. Steinberg, S. W. Becker Jr., T. B. Fitzpatrick and R. R. Kierland.—p. 267.
Color Vision Anomaly Showing Holandric (Y-Linked) Transmission. S. C. Reed, R. K. Cambier and J. E. Applen.—p. 282.

**Genetics of Psoriasis.**—This study is based on information concerning parents, siblings, spouses, and children of 464 consecutive unselected patients with psoriasis. The predominance of male patients with psoriasis was found to be essentially the same as the predominance of males in these families. No relation was found between the sex of the patient and that of his or her affected parent or sibling. There was no relation between birth order and the occurrence of psoriasis. Hyperuricemia occurred in 48% of 98 psoriatic men tested and in 27% of 69 psoriatic women tested. The incidence of psoriasis among the patients' siblings when neither of the patients' parents was psoriatic was 2.45%. It was 9% when one parent was psoriatic. No patient reported that both parents had psoriasis. The incidence of psoriasis among the patients' parents was 5.9%. The data indicate the presence of a hereditary component in the causation of psoriasis. This component is not—as has been postulated by previous workers—a single dominant gene with incomplete penetrance. It is necessary to assume a minimum of two genes to explain the data. A possible explanation based on two autosomal recessive genes, the double recessive being predisposed to psoriasis, is advanced.

## American Journal of Obstetrics & Gynecology, St. Louis

**63:**241-478 (Feb.) 1952. **Partial Index**

Treatment of Cancer of Vulva. W. G. Cosbie.—p. 251.
Myomatous Uterus Complicated by Pregnancy. J. Parks and R. H. Barter. —p. 260.
Cesarean Section Death. C. A. Gordon.—p. 284.
Homologous Ovarian and Testicular Tumors. A. A. Marchetti and L. G. Lewis.—p. 294.
Mesodermal Mixed Tumors of Body of Uterus, with Report of Two Cases. J. A. Hardy Jr. and V. Moragues.—p. 307.
Role of Vaginal Plastic Surgery in Rehabilitation of Women Past Age 60. W. R. Payne.—p. 317.
Studies in Cholinesterase-Hormone Relationship. A. C. Barnes and J. W. Epperson.—p. 326.
Prolonged Labor. S. H. Starr.—p. 333.
Morbidity Studies in 1,000 Consecutive Hysterectomies. R. S. Cron, J. Stauffer and H. Paegel Jr.—p. 344.
Effects of Ligation of Inferior Vena Cava and Ovarian Vessels on Ovulation and Pregnancy in Human Being. C. G. Collins, B. B. Weinstein, R. O. Norton and D. D. Webster.—p. 351.
Bacteroides Infections of the Female Genital Tract. C. E. Clark and A. F. Wiersma.—p. 371.
Coronary Artery Disease in Pregnancy. C. L. Mendelson.—p. 381.
Vaginal Length and Incidence of Dyspareunia Following Total Abdominal Hysterectomy. J. F. Jewett.—p. 400.
*Poliomyelitis in Pregnancy and Puerperium: Experience in Detroit Epidemics of 1949 and 1950. H. D. Priddle, W. R. Lenz, D. C. Young and C. S. Stevenson.—p. 408.
Detection and Treatment of Unsuspected Tuberculous Endometritis. W. Levine and I. I. Kurland.—p. 420.
Incision of Placenta at Cesarean Section: Cause of Fetal Anemia. R. S. Siddall and R. H. West.—p. 425.
Chorionepithelioma. R. W. Mohler and E. L. McConnell.—p. 428.
Metastasis from Carcinoma of Cervix Uteri Simulating Coronary Disease. G. A. Hahn.—p. 433.

**Poliomyelitis in Pregnancy and Puerperium.**—This paper reviews 34 cases of pregnancy complicated by poliomyelitis during the 1949 and 1950 epidemics, in which treatment was given in a hospital that admits from 75 to 80% of all reported patients with poliomyelitis in Detroit. There was one death, a mortality of 2.9% in pregnant patients as compared to 5.3% in nonpregnant patients. The material presented confirms earlier reports of increased susceptibility to poliomyelitis during pregnancy. The expected incidence of pregnancy among the 186 women admitted to the poliomyelitis service was between 11 and 12, whereas the actual incidence was 34. Thus the risk of poliomyelitis was three times as great for pregnant women. An analysis of cases by trimester did not support earlier observations of increased severity during the third trimester; in this series the severest cases occurred during the first six months of pregnancy. If there was no pelvic dystocia, labor was usually normal. The incidence of bulbar paralysis in the 34 pregnant women was 20.7%, of spinal paralysis 44%, and of the nonparalytic form of poliomyelitis 35.3%. There were also 38 women who had had a delivery within 20 months of contracting poliomyelitis. In this postpartum group the incidence of bulbar paralysis was 26.3%, of spinal paralysis 50%, and of nonparalytic poliomyetis 23.7%. There was one death (2.6% mortality). Among the women of childbearing age who were neither pregnant nor in the postpartum period when they contracted poliomyelitis, 16% had bulbar and 48.6% spinal paralysis, and 35.4% had nonparalytic poliomyelitis. A possible correlation between the phase of the menstrual cycle in nonpregnant women and the onset of the symptoms of poliomyelitis has been suggested, and further investigations are being carried out.

## American Journal of Ophthalmology, Chicago

**35:**167-300 (Feb.) 1952

Effect of Sutures and of Thrombin upon Ocular Wound Healing: Jackson Memorial Lecture. J. H. Dunnington and E. F. Regan.—p. 167.
Lens-Induced Uveitis and Glaucoma: Part I. Endophthalmitis Phaco-Anaphylactica. S. R. Irvine and A. R. Irvine Jr.—p. 177.
New Vasodilator in Ophthalmology. J. J. Stern.—p. 187.
Response of Retinal Vessels to Priscoline in Various Vascular Conditions: Study I. M. R. Cholst, H. F. Schilback, M. B. Handelsman and L. M. Lewit.—p. 191.
Implantation Cyst of Conjunctiva. E. W. Perkins.—p. 196.
Pseudoglioma: Clinicopathologic Study of 15 Cases: Part II. Pathologic Classification. T. E. Sanders.—p. 199.
Syndrome of Glaucomato-Cyclitic Crises: Report of Case. E. Billet. —p. 214.
Retroplacement of Inferior Oblique at Its Scleral Insertion. C. Berens, H. G. Cole, S. Chamichian and M. V. Enos.—p. 217.
Observations on Vitamin Deficiencies: In Eye, Ear, Nose, and Throat Clinic of Japanese Prison Hospital. M. E. Pohlman and E. F. Ritter Jr. —p. 228.
Autodemonstration of "Physiologic Nystagmus." G. L. Walls.—p. 231.
Evaluation of Massachusetts Vision Test for Visual Screening of School Children. E. R. Yasuna and L. S. Green.—p. 235.
Menière's Disease Associated with Traumatic Hyphemia and Glaucoma. H. McGrath.—p. 241.
Trichlorethylene as Analgesic in Ophthalmic Practice. B. Offenbach. —p. 250.
True Polycoria. N. S. Jaffe and P. Knie.—p. 253.

## Angiology, Baltimore

**3:**1-68 (Feb.) 1952

*Influence of Pentaerythritol Tetranitrate (Peritrate) on Acute and Chronic Coronary Insufficiency. T. Winsor and P. Humphreys.—p.1.
*Study of Therapeutic Action and Toxicity of Pentaerythritol Tetranitrate. A. Perlman.—p. 16.
*Peritrate in Peripheral Arterial Diseases. S. S. Samuels and E. D. Padernacht.—p. 20.
Electroencephalographic Observations in Cases of Aneurysm and Arteriovenous Fistula of Head and Neck. M. W. Laufer and H. B. Shumacker Jr.—p. 22.
Rational Elimination of Side Reactions and/or Tolerence in Development of Potentially Valuable Drugs. F. F. Yonkman and E. D. Freis.—p. 36.
Sequelae of Deep Thrombosis in Lower Limbs: Follow-Up Study of Patients Initially Treated by Conservative Measures. I. C. Höjensgård. —p. 42.
Role of Sympathectomy in Arteriosclerosis Obliterans. B. Seligman. —p. 48.
Some Vascular Considerations in Treatment of Arteriosclerosis Obliterans. J. Flasher.—p. 53.

**"Peritrate" in Coronary Insufficiency.**—Pentaerythritol tetranitrate ("peritrate"), a powerful explosive of the same group as nitroglycerin and erythritol tetranitrate, is of value in the treatment of the precordial pain of angina pectoris. Pentaerythritol tetranitrate is known also as PETN, "penthrite," "hasethrol," or CH 27. The effect of the drug was studied in 250 patients, of whom 125 had angina pectoris; the other 125 patients, who were of the same age groups and had other diseases that produced pain in and around the chest but did not have angina pectoris, served as controls to study the psychological and analgesic

V 14
1952

properties of the drug. When it was given in average doses of 10 mg. 3 times daily before meals, a satisfactory improvement in the precordial pain was produced in 78.4% of subjects. This drug was more effective in reducing the frequency of attacks than placebos, theobromine calcium salicylate ("theocalcin"), aminophylline, or khellin. Ten mg. three times a day reduced the nitroglycerin requirement, increased exercise tolerance, modified the negative S-T segment shifts ordinarily occurring after exercise, and returned the abnormal resting electrocardiogram toward normal in a significant number of subjects. Side-effects were mild and consisted of headaches, nausea and rash.

**Therapeutic Action and Toxicity of "Peritrate."**—Pentaerythritol tetranitrate ("peritrate") was given to 64 patients, of whom 27 had arteriosclerotic or hypertensive heart disease. Daily doses of from 30 to 160 mg. were given for from 1 to 30 weeks. Twelve obtained relief of a major manifestation or manifestations while taking the drug; intermittent claudication was the most effectively relieved condition. Headache occurred in 1 of 64 patients who were given pentaerythritol tetranitrate; this was recorded as an untoward effect of the drug, although the patient had had similar pains before. The drug seems to be relatively nontoxic in two to three times the dose necessary to produce its maximal therapeutic effects. It appears to have a vasodilating effect that is of value in the management of angina pectoris and intermittent claudication.

**"Peritrate" in Peripheral Arterial Diseases.**—Intermittent claudication was improved in 20 of 30 cases of arteriosclerosis obliterans in which pentaerythritol tetranitrate ("peritrate") was given, but it is suggested that final determination of the value of this, as well as of other vasodilators, must await extensive objective studies of a large series of cases over a long period of time. Psychogenic aspects of the symptoms of intermittent claudication play an important part in any clinical study of the peripheral arterial diseases.

## Annals of Internal Medicine, Lancaster, Pa.

**36:**279-510 (Feb.) 1952

*The Acute Radiation Syndrome: Study of Nine Cases and Review of Problem. L. H. Hempelmann, H. Lisco and J. G. Hoffman.—p. 279.

**Acute Radiation Syndrome.**—As a consequence of two temporarily uncontrolled fission reactions, 10 persons were exposed to penetrating ionizing radiations, and 9 of these are described. Two died, and one of the survivors had typical manifestations of the acute radiation syndrome. Hematological changes were demonstrated in this patient and in four of the six other exposed but asymptomatic persons. The radiations were chiefly moderately fast neutrons and hard gamma rays. The neutrons had limited powers of tissue penetration despite their rather high energies. They were absorbed largely in the superficial few inches of tissue nearest the experimental nuclear reactors. The hands and abdomen of the two fatally injured persons received an exceptionally heavy dose of radiation. These patients had nausea, vomiting, prostration, and a mild fall in blood pressure during the first postexposure day. This was followed by a period of relative well-being, during which the patients had few symptoms except those due to localized damage. Within a week after exposure both patients went into the toxic phase of the syndrome, characterized by high fever, weight loss, and gastrointestinal symptoms. Despite administration of whole blood, plasma, fluids, and penicillin, one patient died on the 9th day, and the other on the 24th day after the accident. The one survivor who developed clinical manifestations of the acute radiation syndrome had nausea and vomiting of a moderate degree. Except for fever and prostration of several days' duration, he was asymptomatic during the two week period of hospitalization. During the third week he lost some of the hair of the scalp and beard; he also experienced fatigability on exertion for several months. There was evidence of severe damage to the germinal tissues, but this proved to be temporary. Five years after exposure this man is in good health, although bilateral radiation cataracts have developed. The remaining six survivors showed no symptoms, even though the radiation doses of several did not differ greatly from that of the survivor with symptoms. All of the asymptomatic survivors were in good health three and a half years after the accident.

## Bulletin of Johns Hopkins Hospital, Baltimore

**90:**105-184 (Feb.) 1952

*Effect of Long Continued Subcurative Doses of Penicillin During Incubation Period of Experimental Syphilis. D. H. Hollander, T. B. Turner and E. E. Nell.—p. 105.

Protein-Binding Properties and Clinical Effects of 3-Hydroxy-2-Phenylcinchoninic Acid. B. V. Jager.—p. 121.

Clinical Use of Artificial Circulation with Note on Intra-Arterial Transfusion. A. M. Dogliotti.—p. 131.

Effect of Cortisone and ACTH on Ocular Inflammation Secondary to Injection of Irritant Substances. A. C. Woods and R. M. Wood. —p. 134.

Studies of Combinations of Antibiotics in Vitro and in Experimental Infections in Mice. E. A. Bliss, P. T. Warth and P. H. Long.—p. 149.

Observations on Possible Role of Nucleic Acid Exchange Reactions in Pneumococcal Capsular Type Transformation: Preliminary Note. R. Austrian.—p. 170.

**90:**1-160 (Feb. [Supplement]) 1952

Dr. Halsted. G. W. Heuer.—p. 1.

**Subcurative Doses of Penicillin During Incubation of Experimental Syphilis.**—Most syphilologists believe that the subsequent course of syphilis may be altered if subcurative amounts of penicillin are given during the incubation period. In the present investigation it was found that single subcurative doses of penicillin prolong the incubation period of experimental rabbit syphilis in direct relationship to the size of the dose up to a limit of about 30 to 40 days. In rabbits in which subclinical infection was maintained by multiple small doses of penicillin for various periods up to 20 weeks, the incubation periods corresponded remarkably closely to those predicted on the basis of theoretical considerations. The evolution of the syphilitic infection after termination of treatment was similar to that observed in untreated animals. Symptomless infection was not observed; rabbits were either cured or subsequently developed lesions. Serological changes were not detected during greatly prolonged incubation periods; even after 20 weeks of treatment infected animals failed to show detectable antibodies either to beef heart antigen or to T. pallidum as tested by the treponemal immobilization test. No evidence of penicillin resistance was noted. These experiments indicate that in the rabbit the prolonged presence of a relatively small number of treponemes in a subclinical syphilitic infection does not stimulate the immune mechanisms of the host sufficiently to greatly modify the evolution of the disease when the administration of penicillin is discontinued. These studies provide additional evidence that during the incubation period syphilis may be cured with minimal amounts of penicillin. The generalized use of penicillin in the prophylaxis and treatment of a variety of conditions has unquestionably resulted in cure of many syphilitic infections that were still in the incubation period. Indeed, the seeming decline in incidence of syphilis since the advent of penicillin may be due to this more than to its use in cases of syphilis that have been diagnosed.

## Georgia Medical Association Journal, Atlanta

**41:**38-74 (Feb.) 1952

Methyl Alcohol Poisoning: Account of 1951 Atlanta Epidemic. M. N. Cooper, G. L. Mitchell Jr. I. L. Bennett Jr. and F. H. Cary.—p. 48.

Transitory Ocular Divergence Paralysis Due to Sickle Cell Anemia. C. D. Benton Jr.—p. 52.

Duodenal Adenoma: Report of Case. G. T. Nicholson, C. M. Henry, A. G. Singer and W. H. Good Jr.—p. 54.

Role of Cerebral Angiography in Management of Cerebral Vascular Accidents. J. R. Simpson, E. Walker and W. W. Moore.—p. 55.

Abdominal Puncture as Diagnostic Aid. C. M. Henry.—p. 59.

## Iowa State Medical Society Journal, Des Moines

**42:**43-86 (Feb.) 1952

Common Lesions of Breast. J. W. Cline and P. R. Westdahl.—p. 43.

Physical and Mental Health in the Aged. E. C. Horvath and S. M. Horvath.—p. 47.

Remarks on Sudden Death. W. B. Bean.—p. 52.

Recent Developments in Ocular Therapeutics. N. G. Douvas.—p. 54.

**42:**87-134 (March) 1952

Psychosomatic Aspects of Depression. W. F. Roth Jr.—p. 94.

Psychiatric Aspects of Gastrointestinal Disorders. E. G. Billings.—p. 101.

Management of Convergent Strabismus Esotropia. A. E. Braley.—p. 106.

Foreign Body in Caecum Causing Symptoms of Acute Appendicitis. H. C. Schwarnweber.—p. 110.

## Journal of Applied Physiology, Washington, D. C.

**4:**629-698 (Feb.) 1952

Effect of Sodium Thiopental on Circulatory Response to Positive Pressure Inflation of Lung. H. L. Price, E. H. Conner, J. D. Elder and R. D. Dripps.—p. 629.
Comparison of Energy Expenditure of Children Measured with Two Types of Apparatus. C. M. Taylor, O. F. Pye, M. Ellis and F. Godshall.—p. 635.
Pulmonary Function Studies in Healthy Men and Women 50 Years and Older. F. E. Greifenstein, R. M. King, S. S. Latch and J. H. Comroe Jr.—p. 641.
Hormonal and Renal Mechanisms of Cold Diuresis. R. A. Bader, J. W. Eliot and D. E. Bass.—p. 649.
Renal Responses to Exercise, Heat and Dehydration. J. H. Smith, S. Robinson and M. Pearcy.—p. 659.
Effect of Diet upon Urinary Amylase Excretion. B. W. Smith and J. H. Roe.—p. 666.
Activity of Acetylcholine System in Human Epileptogenic Focus. D. B. Tower and K. A. C. Elliott.—p. 669.
Renal Hemodynamics Following Intravenous Administration of Gelatin. A. J. Michie, C. E. Koop, J. M. Walker and others.—p. 677.
Sensory Response in Man Following Intra-Arterial Injection of Hypertonic Glucose and Saline. O. T. Kuzma, J. A. Polhemus and H. R. Bierman.—p. 682.
Peripheral and Visceral Vascular Effects of Exercise and Postprandial State in Supine Position. M. Lowenthal, K. Harpuder and S. D. Blatt.—p. 689.

## Journal of Aviation Medicine, St. Paul

**23:**1-100 (Feb.) 1952. **Partial Index**

Legal Aspects of Air Transportability of Sick. G. L. Dunnahoo.—p. 3.
Flight Comfort and Safety for Patients. N. B. Johnston.—p. 10.
In-Flight Problems in Air Transportation of Patients. J. P. Pollard.—p. 15.
Medical Aspects of Helicopter Air Evacuation. M. T. Martin.—p. 20.
Cardiovascular Problems in Aviation Medicine: Evaluation of Heart Murmurs. J. M. Packard and A. Graybiel.—p. 24.
*Air Transportation of Persons with Cardio-Respiratory Disease and/or Injury. H. A. Smedal.—p. 33.
Effect of Altitude on Simulated Sinus Fractures and Other Conditions Introducing Air into Skull. W. L. Burkhardt and L. E. Moses.—p. 38.
Flight Surgeon and Flight Safety. W. L. Jones.—p. 44.
Method of Evaluating Aircraft Acoustical Comfort. S. Lippert and M. M. Miller.—p. 54.
Analysis of Pilots' Eye Movement in Flight. J. L. Milton.—p. 67.
Observations on Weather-Sensible Arthritics During Controlled Exposures to Low and High Atmospheric Pressures. H. L. Jones and E. Reeves.—p. 77.

**Air Transportation of Cardiorespiratory Patients.**—Largely on the basis of theoretical discussion Smedal believes that persons with coronary heart disease tolerate anoxia of a moderate degree very well. One should therefore be able to be quite liberal in advice to coronary disease patients in regard to travel by air. With the extensive use of pressurized cabins much of the hazard for patients with cardiorespiratory disease or injury has been diminished and even eliminated. The chief remaining hazard is explosive decompression. To avoid the sudden anoxia involved in sudden decompression, persons with cardiorespiratory disorders must be protected by an adequate source of supplemental oxygen. Precautions must be taken also that the patients do not become anxious, frightened, tired, motion sick, or anoxic. With adequate care and preparation, most patients with cardiorespiratory disorders may be transported by air.

## Medicine, Baltimore

**31:**1-132 (Feb.) 1952

*Study of Sarcoidosis: Based on Combined Investigation of 160 Cases Including 30 Autopsies from the Johns Hopkins Hospital and Massachusetts General Hospital. W. T. Longcope and D. G. Freiman.—p. 1.

**Sarcoidosis: Combined Investigation of 160 Cases.**—This extensive monograph stresses among other factors that the etiology of the disease now generally known as sarcoid, sarcoidosis, or as Besnier-Boeck-Schaumann's disease is still obscure. Its relation to tuberculosis or other forms of granuloma is not definitely known, and conclusive demonstration of its presence depends on the histological structure of the lesions. It resembles Hodgkin's disease. Schaumann, with this in mind, used the term "benign lymphogranulomatosis" to distinguish it from "malignant lymphogranulomatosis" or Hodgkin's disease. Sarcoidosis is fairly common, often escapes detection, may be incapacitating, sometimes destroys an organ such as the eye, and may cause death. In many respects sarcoidosis has the attributes of a pathological and clinical entity, assuming the character of a specific chronic infection, which progresses sluggishly, is widely disseminated, heals slowly, relapses frequently, and causes damage essentially not by intoxication, but by mechanical injury. There is no evidence that it is caused by any known pathogenic agent. Efforts to transmit it to animals have failed. Furthermore, sarcoidosis does not seem to occur spontaneously in animals. Under these circumstances, the scope for further investigation concerning the nature of sarcoidosis is limited. Its prevalence in the Negro race and its tendency to appear in rural districts suggest that information might be gained through epidemiological studies. It might be possible to determine why sarcoids seem to arise in injured tissue. Whether this is due to infection by contact, to metastasis, or to a quality inherent in the tissues of the patient with sarcoidosis is not known. There is no explanation of why the lesions of sarcoidosis heal. This process is slow, and is usually characterized by hyalinization of individual epithelioid bodies. This may take place in one place while the disease progresses in another organ or even in the same organ. Studies on the effects of cortisone and corticotropin on sarcoidosis may aid in a better understanding of the manner in which healing takes place, for, according to recent reports, the influence of these two hormones is exerted on the epithelioid bodies as well as on the granulomatous lesions.

## New England Journal of Medicine, Boston

**246:**205-242 (Feb. 7) 1952

Preliminary Observations on Mental Disturbances Occurring in Patients Under Therapy with Cortisone and ACTH. L. D. Clark, W. Bauer and S. Cobb.—p. 205.
*Erythema Multiforme Bullosum (Stevens-Johnson Syndrome). W. N. Agostas, N. Reeves, E. D. Shanks Jr. and V. P. Sydenstricker.—p. 217.
Problems of Ischemia of Lower Extremity. G. R. Dunlop.—p. 219.
Foreign-Body Perforations of Gastrointestinal Tract: Report of Six Cases. L. Persky and E. D. Frank.—p. 223.
Digitalis Poisoning and Its Treatment. B. M. Cohen.—p. 225.

**Erythema Multiforme Bullosum.**—The occurrence of erythema multiforme bullosum (Stevens-Johnson syndrome) is reported in a Negro woman, aged 22, and in a Negro boy, aged 14. In both patients treatment with sulfonamides and penicillin proved ineffective. On the 10th hospital day the woman patient was comatose and treatment with corticotropin (ACTH) was started; 25 mg. of the drug were given intramuscularly every six hours for 24 hours, then 25 mg. every eight hours. Within 48 hours of institution of corticotropin therapy the temperature fell to normal and consciousness and orientation returned rapidly. Corticotropin was discontinued after six days of treatment, a total dose of 475 mg. having been given. The skin lesions healed gradually by desquamation and with pigmentation. The boy was given 100 mg. of cortisone acetate intramuscularly every 8 hours on the first day, 100 mg. every 12 hours on the second day, and 100 mg. daily thereafter. Within 24 hours after the start of cortisone therapy the lesions had diminished markedly and in 96 hours all the lesions had cleared. Within seven weeks the patient had a recurrence of the skin eruption. He was given 25 mg. of corticotropin intramuscularly every six hours. After four days of therapy it was thought that progress was not satisfactory, and treatment was changed to cortisone acetate, 100 mg. orally every 12 hours on the first day, then 100 mg. daily. There was complete clearing of the lesions by the fifth day of cortisone treatment. Erythema multiforme bullosum is an acute febrile, sometimes fulminating systemic disease that may last from a few days to several weeks. Lesions involving the mucous membranes (conjunctivas and orifices), skin and respiratory tract appear almost immediately. The skin lesions may be macular, papular, annular, iris-type, or vesicobullous. Though usually a self-limited disease, it has caused a number of deaths. There is a definite tendency to recurrence. The etiology of the disease is unknown, and as with any such disease its treatment is unsatisfactory and mainly symptomatic. The theory that the disease has an allergic etiology appears to be the most tenable, and a sensitivity reaction to either drugs or bacterial products is to be considered. In addition to the author's two cases, the report of one case is cited from the literature with a similar dramatic response to corticotropin and cortisone.

V 14
1952

## FOREIGN

### Annales de Médecine, Paris

**52:**747-854 (No. 8) 1951

*Cortisone, Corticotropin (ACTH) and Infections. F. Coste, B. Piguet, P. Galmiche and J. Cayla.—p. 747.
Rare Cause of Aneurysm of Pulmonary Artery: Latent Embolism in Course of Subacute Venous Septicemia. H. Boucher, M. Protar and J. Bertein.—p. 803.
Relationship Between Inclination of Cranial Base and Delayed Constitutional Maturation in Man. G. Pankow.—p. 820.

**Cortisone, Corticotropin, and Infections.**—In an extensive review of the subject, the authors reached the following conclusions: In general cortisone and corticotropin (ACTH) exert a suppressive effect on the symptoms of acute bacterial or virus infections in man. While these drugs do not check the infectious process, they do not make it worse, according to the reports available to the authors. When employed in much larger than the usual clinical doses, the two hormones usually aggravate acute experimental infections, despite their suppressive effect on symptoms. A number of acute infections have occurred in patients with rheumatic and blood diseases treated with cortisone and corticotropin; in particular acute pneumonias and staphylococcic infections at the site of injection of the drugs were common. The occurrence, during hormone therapy, of ulcers in the digestive tract and thromboembolic episodes of obscure origin may have been related to infection. The incidence of infectious side-effects of treatment with adrenal cortex preparations has not yet been determined statistically. The authors presume that such undesirable side-effects occur in about 10% of the patients treated with these drugs. Moderate doses of cortisone and corticotropin aggravate experimental tuberculosis in animals that are resistant to tuberculosis, such as rats and mice, but have a relatively favorable effect in guinea pigs, which are highly susceptible to tuberculosis. There is a definite risk that cortisone and corticotropin therapy may aggravate clinical, progressive or old tuberculosis in man. Consequently, in spite of the suppressive effect of these drugs on the symptoms of tuberculosis, their use as an adjuvant in this disease does not seem advisable. Exceptions to this rule, however, are conceivable in the presence of severe nontuberculous disease in a tuberculous patient. In such cases treatment with corticotropin and cortisone should be combined with antibiotics administered during and after the hormone treatment, and with rigid control of tuberculous lesions or sequelae. Although it cannot be definitely excluded that adrenal cortex preparations may directly stimulate growth of bacteria, these drugs rather seem to favor the spread of bacteria by means of metabolic and tissue effects which render the therapy anti-inflammatory. It has not been established that administration of therapeutic doses of these drugs prevents formation of antibodies, and certain allergic reactions may be attenuated only by very high doses. Inhibition of the diapedesis of leukocytes, of phagocytosis, and of mitosis, reduction of vascular permeability, and increase of tissue permeability may play their part in the promotion of infection by the adrenal cortex preparations.

### Aparato Respiratorio y Tuberculosis, Santiago

**16:**183-234 (Oct.-Dec.) 1951

*Thiosemicarbazone in 96 Cases of Pulmonary Tuberculosis: Immediate Results. H. Orrego Puelma, M. Zanolli Granello and R. Olmedo Cruz.—p. 183.
Intestinal Tuberculosis (Comparative Study of Deaths from Pulmonary Tuberculosis With and Without Streptomycin Therapy). H. Orrego Puelma and S. Raddatz Ebensperger.—p. 203.

**Thiosemicarbazone in Pulmonary Tuberculosis.**—Ninety-six patients between the ages of 10 and 60 years who had pulmonary tuberculosis were treated with thiosemicarbazone. The disease was in an advanced or very advanced stage, with or without cavitation. The treatment started with daily doses of 25 mg., which were increased every week by 25 mg. up to an average daily dose of maintenance of 125 mg. The total doses varied from 5 gm. given in two months to 25 gm. given in 10 months. In most cases the drug caused improvement of the general condition, with control of fever, diminution of cough and sputum, increase of body weight, and improvement in the erythrocyte sedimentation rate. The sputum became negative for tubercle bacilli in 21 of 86 cases in which it was positive before the treatment. In the group of 52 patients in an advanced stage of the disease, the pulmonary lesion, as seen by roentgen examination of the chest, improved in 37, did not change in 11, and progressed in 4 cases. In the group of 42 patients in a very advanced stage of the disease, the pulmonary lesion improved in 24 cases, did not change in 10, and progressed in 8 cases. In 65 patients with cavitation, the size of the cavity diminished in 21 cases, did not change in 35, and progressed in 9 cases. Laryngeal and tracheobronchial tuberculosis was associated with pulmonary tuberculosis in 11 cases each. The disease was cured during thiosemicarbazone treatment in three cases of laryngeal, and three of tracheobronchial tuberculosis. Treatment with these doses was well tolerated in all but three cases, two that were complicated by jaundice and one by renal disorder. The treatment is an adjuvant to surgical collapse as it transforms exudative and superactive forms of the disease into a local condition which is propitious for the intervention.

### Australian J. Exper. Biol. and M. Science, Adelaide

**29:**401-476 (Nov.) 1951. **Partial Index**

Attempt at Chemical Identification of "Neurocletin" (Substance Evoking Axon-Sprouting). H. Hoffman and P. H. Springell.—p. 417.
*Haemagglutinin of Haemophilus Pertussis: IV. Reactions and Antibody Response in Babies and Children Following Administration of Haemagglutinin Adsorbed on Aluminium Phosphate. S. Fisher, M. F. Warburton, H. N. B. Wettenhall and S. W. Williams.—p. 425.
Absorption and Metabolism of Substances with Vitamin K Activity Under Normal Conditions and After Biliary Obstruction: Study in Man and Rabbits, Including Vitamin K Saturation Test. P. Fantl, J. F. Nelson and G. J. Lincoln.—p. 433.
Influence of Sodium Salicylate and Acetyl Salicylic Acid on Release of Histamine in Anaphylaxis. E. R. Trethewie.—p. 443.
Effects of Lymphatic Obstruction and of Posture on Absorption of Protein from Peritoneal Cavity. F. C. Courtice and A. W. Steinbeck.—p. 451.
Pleurodynia Virus Pathogenic for Infant Mice. N. Atkinson, J. Dineen and J. S. Robertson.—p. 463.
Role of Adrenal Cortex in Diabetic Ketosis. S. Rose.—p. 469.

**Antibody Response to Hemagglutinin of Hemophilus Pertussis.**—This paper deals with reactions and antibody response in babies following injection of pertussis hemagglutinin. At first, soluble (extracted) hemagglutinin was used; later antigen adsorbed on aluminum phosphate floccules was employed, as the latter was more stable. It was found that the adsorbed hemagglutinin injected into babies in single subcutaneous or intramuscular doses of 1 ml., or two subcutaneous doses of 0.1 ml. or 0.3 ml. spaced one to two and one-half months apart, produced mean serum antihemagglutinin titers between 11.3 and 32. The single subcutaneous doses resulted in significantly lower serum antibody levels. Local and general toxic effects, observed in over 270 subjects, were mild in babies and young children with no history of previous immunization against whooping cough. The reactions were more marked in older children and in those previously sensitized with H. pertussis, but were no more severe than those associated with administration of bacterial pertussis vaccine in customary doses.

### British Journal of Radiology, London

**25:**57-112 (Feb.) 1952

Ionization Produced by High Voltage Radiation in Extrapolation Chamber with Walls of Various Atomic Numbers and Its Relation to that to be Expected Theoretically. A. A. K. Ibrahim and C. W. Wilson.—p. 57.
Uptake of Radioactive Phosphorus in Normal Brain and Brain Tumours. J. E. Stapleton, W. McKissock and H. E. A. Farran.—p. 69.
Osteoarthritis of Hip Joint. J. F. Brailsford.—p. 76.
Apparatus for Rapid Estimation of Tracer Quantities of Radioactive Isotopes in Excreta. N. Veall and H. Vetter.—p. 85.
Effect of Ionizing Radiations on Broad Bean Root: Dependence of X-Ray Sensitivity on Dissolved Oxygen. J. Read.—p. 89.
*Use of Small Protection Films for Estimation of Doses Received on Fingers and Hands During Radium Manipulations. T. M. Robb and R. E. Ellis.—p. 100.

**Estimation of Irradiation of Fingers During Radium Manipulations.**—The use of ionization chambers to measure radiation received by the fingers and hands of radiotherapists is technically difficult. This led to an attempt to assess these doses by measuring their effect on small x-ray films 1 sq. cm. in area, worn on the pulp side of the finger tip or hand. Packed in waterproof material, they may be worn without discomfort or im-

pediment, and withstand the customary washing and "scrubbing up" before an operation. To estimate the radiation received by the films their densities after exposure and development have been compared with similarly packed films that have received known doses of $\gamma$ rays, and have been processed with the test films. Densities were compared either visually or by means of a Hilger photoelectric microphotometer. A summary of the initial results obtained during a variety of radium manipulations are given in tables.

## British Medical Journal, London

**1**:341-396 (Feb. 16) 1952

Rheumatic Diseases in the U. S. A. J. R. Duthie.—p. 341.
*Involution of Cervix. H. C. McLaren.—p. 347.
Correction of E.S.R. in Anaemia: Experimental Study Based on Interchange of Cells and Plasma Between Normal and Anaemic Subjects. J. C. F. Poole and G. A. C. Summers.—p. 353.
Cortisone in Idiopathic Steatorrhoea. J. Badenoch.—p. 356.
Mercury Nephrosis in Young Children, with Special Reference to Teething Powders Containing Mercury. V. K. Wilson, M. L. Thomson and A. Holzel.—p. 358.
Fatal Hypokalaemic Alkalosis with Tetany During Liquorice and P.A.S. Therapy. N. J. Roussak.—p. 360.
Case Illustrating Hazards of Manipulative Treatment in Lumbo-Sacral Disk Protrusions. R. Hafner.—p. 361.

**Involution of the Cervix.**—Of 262 women who submitted to examination of the cervix of the uterus six weeks after delivery, 121 had erosions. The 141 women who had no erosions served as controls. Of the 121 patients, 43 (35%) had backache, and, of the 141 controls, 26 (18%) had this symptom. Backache and cervical erosions could not be correlated, since backache became uncommon after four to five months and since, of nine patients with persistent backache, six had healed and three had unhealed cervical erosions. Six weeks after delivery 34 (28%) patients with erosions had a vaginal discharge and 21 (17%) had only traces, as compared to 25 (18%) of the controls who had a vaginal discharge and 20 (14%) controls who had traces. Comparison of clinical observations of the cervix with the patients' symptoms of discharge suggested that in most cases the cervix was not the source of discharge; postpartum cervical mucus, possibly because of its tenacious quality, seldom reaches the vulva in amounts sufficient to cause leukorrhea. Of the 121 patients with cervical erosions, 77 were not treated but were reexamined at intervals of six to eight weeks. If the erosion persisted over five months it was considered unhealed. Spontaneous healing occurred in 49 patients, while the erosion persisted in 28. The final number of patients with discharge was eight with healed erosions and seven in whom discharge and persistent erosion coexisted. Postnatal erosions are, in fact, innocuous and usually resolve without treatment. Persistent erosions are usually innocuous, but excessive mucous discharge may require treatment by cautery, as in 4 (5%) of the 77 patients who were not treated previously. Comparison of 77 squamocolumnar biopsy specimens from both healed and persistent erosions taken at intervals up to one year after delivery, with 142 specimens obtained six weeks after delivery, showed postpartum involution; biopsies from the edge of healed or persistent erosions were similar; both depicted advancing involution.

## Deutsche medizinische Wochenschrift, Stuttgart

**77**:225-256 (Feb. 22) 1952. **Partial Index**

*Need of Change in Interpretation of Experimental $B_1$ Avitaminosis and in Concept of Vitamin $B_1$ as Antineuritic Substance. H. Luckner and R. Magun.—p. 225.
Dependence of Reaction in Allergic Tests and of Desensitizations on Meteorlogic Factors. G. Wildführ.—p. 229.
Diagnosis and Therapy of Congenital Angiocardiopathies. J. Jacobi, M. Loeweneck and F. Northoff.—p. 232.
Penicillin Therapy in Syphilis of Internal Organs. H. Dennig.—p. 237.

**Change in Concept of Vitamin $B_1$ as Antineuritic.**—Luckner and Magun point out that the disturbance in cerbral carbohydrate metabolism at the pyruvic acid phase, discovered by Peters in 1935, was interpreted by him and many others as proof of the importance of vitamin $B_1$ as an antineuritic factor. Newer investigations, however, revealed more differences than similarities between human beriberi and the manifestations of vitamin $B_1$ deficiency in animals. Furthermore no functional defects in the peripheral nerves can be produced in either man or animals if the deficiency is limited to vitamin $B_1$. For this reason, $B_1$ avitaminosis cannot be identified with the polyneuropathic form of beriberi. Neurological and neurohistological studies demonstrated that the impairment of nervous function demonstrable in animals with deficiency in vitamin $B_1$ is localized in the brain stem. The impairment of the function of the peripheral nerves, which followed the insufficient nutrition during and after the last war, was due to more complex damages than those that follow pure vitamin $B_1$ deficiency. Many clinical cases during and after the war revealed that lesions of the peripheral nerves, which had been ascribed to $B_1$ deficiency, showed no change in objective symptoms or in their course when vitamin $B_1$ was administered, regardless of the dose. Vitamin $B_1$ has no antineuritic effect. The improvement observed in patients with polyneuritis following administration of vitamin $B_1$, especially when it has been given in large doses, is due to an experimentally demonstrable analgesic action rather than to its compensating effect on an existing deficiency.

## Die Medizinische, Stuttgart

Year 1952:271-304 (March 1)

Evaluation and Treatment of Cardiac and Circulatory Disturbances in Children (II). K. Hofmeier.—p. 271.
Additional Contribution to Estradiol-Progesterone Hormone Antagonism. A. Obal.—p. 276.
*Clinical Test of Sulfonamide Compound "Gantrisin"; Experiences in Urology. S. Raabe.—p. 282.

**Sulfisoxazole in Urology.**—In 88 of 110 patients with various urologic disturbances treated with sulfisoxazole (gantrisin®) the in vivo effect of the drug on the bacterial flora was examined before and after the treatment. Escherichia coli disappeared completely from the bladder urine within five days in 22 patients, while in 8 additional patients considerable improvement resulted from the first course of treatment, followed by complete disappearance of the colon bacilli after a second course with sulfisoxazole. Three patients, two with a Staphylococcus infection and one with a Streptococcus infection, became completely free of bacteria within five days. The remaining 55 patients had mixed infections due to E. coli, Proteus, enterococci, staphylococci, and streptococci. Sulfisoxazole was most effective in infections due to E. coli and Proteus and somewhat less effective in infections due to staphylococci and streptococci. In seven patients new bacteria, such a Pseudomonas aeruginosa and enterococci, appeared in the course of the treatment with sulfisoxazole. Both these types of bacteria are of minor pathological importance for the urinary organs. Because of its specific effect on coli bacteria and Proteus, which participate in the great majority of infections of the urinary passages, sulfisoxazole is to be considered the drug of choice in urology. Its clinical advantages consist of particularly good tolerance, the absence of toxic side-effects, the absence of crystalluria even without simultaneous alkali supply, and the absence of any damage to the renal parenchyma. Determination of the urease activity of the bacteria proved that sulfisoxazole may exert a better effect on the urease-forming microorganisms than that exerted by other sulfonamides. Roentgenologic examination and renal function tests in patients with infections of the kidney and its pelvis showed that morphological and functional conditions were rapidly restored to normal by the sulfisoxazole therapy. Cystoscopic examination showed the highly satisfactory effect of sulfisoxazole on most severe inflammations of the urinary bladder associated with destruction of mucous membranes. General treatment with sulfisoxazole given orally, intravenously, or intramuscularly should be attempted. The following course of treatment proved effective: 15 tablets (7.5 gm.) in four divided doses on the first day, 12 tablets (6 gm.) daily on the second, third, and fourth day, and 9 tablets (4.5 gm.) on the fifth day. Local irrigation treatment alone or in addition to general treatment may be required in cases with impaired kidney function causing unsatisfactory concentration of the drug in the urinary passages. Complete disappearance of bacteria may not be expected following a single course of treatment with sulfisoxazole in the presence of extensive necrotic defects after surgical or intravesical electrical intervention, always associated with mixed infections. Repeated courses of treatment will accelerate the cleansing of the wound,

V 14
1952

epithelization of the defects, and sterilization of the urine. Combined treatment with sulfisoxazole and penicillin, streptomycin, or aureomycin is recommended in mixed infections with enterococci and Pseudomonas aeruginosa.

## Edinburgh Medical Journal

**59:**1-64 (Jan.) 1952

Hormones of Adrenal Cortex in Clinical Medicine. E. C. Kendall.—p. 1.
Peripheral Nerve Injuries. A. J. Slessor.—p. 13.
Carcinoma of Pancreas. A. W. Branwood.—p. 28.
Serum Vitamin A and Carotene Levels in Normal Adults. K. D. Lahiri and F. J. Scandrett.—p. 39.
Eosinophilic Respiratory Syndrome. E. Soysa.—p. 45.
History of Human Cancer. M. Copisarow.—p. 49.

## Lancet, London

**1:**377-428 (Feb. 23) 1952

Geriatric Problem in Mental Hospitals. L. C. Cook, E. C. Dax and W. S. Maclay.—p. 377.
Subacute Thyroiditis. R. Fraser and R. J. Harrison. —p. 382.
Mumps Meningo-Encephalitis: Outbreak in Preparatory School. W. Henderson. —p. 386.
*Agglutination Test for Rheumatoid Arthritis. D. Hobson and R. H. Gorrill.—p. 389.
*Differential Sheep-Cell Agglutination Test in Rheumatoid Arthritis. F. E. T. Scott.—p. 392.
Antenatal Prediction of Haemolytic Disease of Newborn. D. C. A. Bevis. —p. 395.
Tension Pneumothorax Following Tracheotomy. J. F. Dark.—p. 398.
Allopregnane-3β: 20β-Diol as Standard for Determination of Urinary Pregnanediol. R. M. Haslam and W. Klyne.—p. 399.

**Agglutination Test for Rheumatoid Arthritis.**—The serum of patients with rheumatoid arthritis shows agglutinins against sheep red cells partially sensitized with rabbit antibody. While similar agglutinins are present in low titer in normal serum, Rose and his colleagues believed that the titers in rheumatoid arthritis were raised sufficiently to differentiate the disease from other conditions. Gorrill and Hobson found recently that the mechanism of agglutination of sensitized red cells by normal sera of several species was associated with the heat-stable fourth component of complement (C′ 4). In this study they attempted to determine if an elevation of titer of this normal agglutinating factor could explain the augmented reaction, which is apparently specific for rheumatoid arthritis. The lytic activity of complement was inactivated by heating at 56 C for 20 minutes. Heterophil antibody was removed by two absorptions with an equal volume of packed sheep red cells at 0 C for one hour. In every case portions of the prepared serum were treated to make it possible to study the relationship of the agglutinating factor and the heat-stable complement components (C′ 3 and C′ 4). It was found that serums of patients with rheumatoid arthritis contain increased amounts of a heat-stable factor that potentiates agglutination of partly sensitized red cells. This factor is very closely associated in its behavior and properties with the heat-stable fourth component of complement (C′ 4). Inferential evidence of this association is presented. The lytic titer of C′ 4 in rheumatoid arthritis tends to be raised above normal levels in patients with increased agglutinating titers. The reaction is highly specific for rheumatoid arthritis and is positive in most cases of moderate severity.

**Differential Sheep Cell Agglutination Test in Rheumatoid Arthritis.**—Scott says that Rose's differential agglutination test has been used at the Canadian Red Cross Memorial Hospitals for about two years. He also mentions a modification of this test described by Heller, which, however, seems far less specific for rheumatoid arthritis, since an appreciable number of serums from patients with different diseases, with or without arthritis, gave positive results, as did a number of normal controls. It was therefore not considered advisable to use the modified test in place of the agglutination test in the differential diagnosis of arthritis. On the basis of the results obtained in more than 700 tests it is concluded that estimation of the differential agglutination titer, as used by Rose and his co-workers has a definite place in the differential diagnosis of arthritis. A strongly positive result is almost pathognomonic of rheumatoid arthritis, if disseminated lupus erythematosus and hepatitis are excluded. A negative test, on the other hand, has no excluding value, since about 40% of patients with known rheumatoid arthritis gave negative results.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

**96:**245-308 (Feb. 2) 1952. **Partial Index**

*Tietze's Disease. W. H. D. de Haas.—p. 254.
Diverticula of Jejunum and Ileum (Except That of Meckel). T. Meuwissen and B. Oldenziel.—p. 257.
Epilepsy and Left-Handedness. W. Hordijk.—p. 263.

**Tietze's Disease.**—Eight patients with Tietze's disease (painful swelling of costal cartilages) were observed by de Haas in 18 months at a clinic for rheumatic diseases in Amsterdam. The histories of two patients in whom a tumor was suspected are given. The first one had, in addition to a mild scapulohumeral periarthritis, a spool-shaped, smooth swelling on the second rib on the left side, which was painful. Roentgenoscopy revealed considerable calcification of the rib cartilage. Tumor could be ruled out on the basis of a biopsy, and syphilis, tuberculosis, and other diseases were excluded in this and other cases on the basis of laboratory tests. However, slight eosinophilia was found regularly. The uric acid and cholesterol content of the blood were either at the upper level of normal or increased. The author suggests that spraining of the costochondral connections possibly combined with a predisposition to arthritis might play a part in the pathogenesis of the painful swelling of the costal cartilages.

## Nordisk Medicin, Stockholm

**47:**1-42 (Jan. 4) 1952. **Partial Index**

Corticotropin (ACTH) and Cortisone: Dosage, Administration and Risks in Treatment of Non-Endocrine Diseases. K. Berglund.—p. 3.
Phenylcinchoninic Acid (HPC) Treatment in Diabetes Insipidus and Acute Arthritis. S. Helander.—p. 10.
*Treatment of Ulcerative Colitis in Children: Attempt to Combine Psychotherapy Sedatives, Enzyme-Binding Drugs and Antibiotics. L. Bastman-Heiskanen.—p. 13.
Renal Function of Fetus. O. Kinnunen and A. Paalanen.—p. 19.
Bilateral Rupture of Tympanic Drum Due to Stroke of Lightning. K. Zilstorff-Pedersen.—p. 22.

**Treatment of Ulcerative Colitis in Children.**—Bastman-Heiskanen says that ulcerative colitis may be regarded as a "psychic-neuro-enzymatic-infectious" complex in which now one, now another, component dominates the picture. Psychiatric examination with a view to possible psychotherapy should precede somatic treatment. In the acute phase, when bacterial activity seems to predominate, chloramphenicol is effective; in the more chronic cases, in which irritation in the vegetative system seems to be most conspicuous, administration of belladonna and phenobarbital gives good results. Surgical treatment of ulcerative colitis in children is not advised. Six cases of ulcerative colitis of from two months' to eight years' duration in children aged from 5 to 15 years are reported. In three cases there were more or less marked conflict situations in the home. In one case use of belladonna and phenobarbital resulted in noticeable improvement; in four out of five patients treated with chloramphenicol, partly alone, partly in combination with belladonna and phenobarbital, the results were good. Lysozyme determination in the feces, made in three of the cases, showed greatly increased lysozyme values; clinical improvement began with treatment with lauryl sulphate in one case, but no significant reduction in the lysozyme content was demonstrable. Early improvement occurred in a case in which ileostomy was done, but it was succeeded by spread of the ulcerative process to the ileum and fatal outcome. Attention is called to the periodicity of the disorder and the tendency to spontaneous recovery, believed to be especially marked during puberty.

## Riforma Medica, Naples

**66:**29-56 (Jan. 12) 1952

"Dolichomegaesophagus" Aggravated by Stenosis of Medium Portion of Esophagus. E. Ruggieri.—p. 29.
*Sporadic Hemophilia: Two Cases. M. Sposito and P. Marrazza.—p. 34.
Pulmonary Cyst Caused by Echinococcus and Associated with Bilateral Tuberculosis: Rare Case. E. Ciamillo and S. Cattini.—p. 37.

**Sporadic Hemophilia.**—According to the authors, "clinically" sporadic hemophilia is present in persons of hemophilic families, while "biologically" sporadic hemophilia is present in persons of nonhemophilic families and is due to a change in the sexual chromosomes. Since the characteristic anomalies of clotting time

of carriers of hereditary hemophilia may be found in mothers of patients with the first type of sporadic hemophilia and are not found in mothers of patients with the second type, estimation of clotting time and of prothrombin utilization is important in the identification of either type of sporadic hemophilia. The authors report on two boys, aged 10 and 4, respectively, in whom excessive bleeding of the gums occurred repeatedly, and the clotting time of whole blood and recalcified plasma was greatly delayed. Prothrombin activity and the amount of fibrinogen in the plasma being normal, a thromboplastin hypoactivity was assumed to be present. In clotting time tests, 0.5 cc. of blood and 0.1 cc. of plasma of the patients did not influence the clotting time of 1.5 cc. of blood and 0.3 cc. of plasma of normal persons. On the contrary, 0.5 cc. of blood and 0.1 cc. of plasma of healthy persons brought to normal the clotting time of 1.5 cc. of blood and 0.3 cc. of plasma of the two patients. This suggested that the patients' blood lacked a coagulative factor. In additional tests, minimum quantities of blood and plasma of patients with essential thrombocytopenic purpura brought to normal the clotting time of the blood of the two patients. The amount of prothrombin utilized was considerably diminished in the blood of each patient taken separately, but was normal during cross coagulation. The results indicated that the plasmatic factor that was lacking in the authors' two patients was present in the patient with essential thrombocytopenic purpura. Since in these patients the number of blood platelets is diminished, the plasmatic factor must be represented by the antihemophilic globulins. Thus, the two patients' tendency to excessive bleeding was caused by lack of antihemophilic globulins. Because there was no familial history of hemophilia, the clotting time was normal in their lineal and collateral relations, and prothrombin utilization during clotting time was normal in the patients' mothers, the diagnosis was biologically sporadic hemophilia.

## Semaine des Hôpitaux de Paris

**28:**203-240 (Jan. 22) 1952

*Angiocholography and Effects of Posture; Pseudospasm of Oddi's Sphincter; So-Called Contraction of Hepatic Canal; Usefulness of Radiomanometric Studies; in Procumbent, Trendelenburg, and Standing Position. J. Ranty, J. Paulhiac and J. Caroli.—p. 203.

Undesirable Renal Effects Due to Blood Transfusions. I. General Review. R. André, B. Dreyfus and N. Taleb.—p. 214.

**Angiocholography and Effects of Posture.**—The effects of posture on the biliary ducts were studied in roentgenograms made under controlled pressure (biliary radiomanometric studies) in 14 patients. Routine frontal roentgenograms of the biliary ducts taken with the patient in dorsal recumbent position may lead to an erroneous interpretation that will be corrected on the basis of lateral (profile) roentgenograms taken with the patient in the prone, Trendelenburg, and, when possible, in standing position. Even the roentgenograms taken under manometric control may be interpreted more precisely if the patient's position has been varied in these ways. The principal conclusions reached were as follows: The reflux within the hepatic ducts with the patient in recumbent position does not by itself produce sufficient evidence of spasm of Oddi's sphincter; it may be due to a sloping position of the upper biliary ducts with respect to the choledochoduodenal orifice. In addition it has been possible to demonstrate that sphincteral action at the level of the bile duct is related to a superpancreatic angulation of the bile duct in the anteroposterior plane, which is more pronounced as the bile duct is dilated.

**28:**371-416 (Feb. 6) 1952

Study of Various Wetting Agents; Their Use in Gastroenterology. C. Debray and M. Méhaut.—p. 371.

Classification of Hemorrhagic Diseases. A. Baserga.—p. 377.

*Treatment of Hemophilia by Plasma Injections. P. Cazal and P. Izarn.—p. 380.

Nervous Forms of Infectious Mononucleosis. P. Kissel, G. Arnould and P. Leval.—p. 387.

**Treatment of Hemophilia by Plasma Injections.**—The hemostatic value of a clot depends on the quantity of thrombin formed during the clotting process rather than on clotting time. Clot structure in hemophilia is characterized by loose meshes and fragile fibrin filaments; after injection of frozen plasma, the clot appears normal, with numerous centers of coagulation, thick fibrin filaments, and compact meshes. Comparatively large quantities of plasma are needed to secure a normal serum prothrombin level; repeated injections are cumulative in their effect, so that a normal serum prothrombin level can be maintained in a hemophilic person for several days. Serum prothrombin, however, returns to its initial level within 24 hours after a single plasma injection; the effect of plasma on clotting time is more lasting, continuing for about 48 hours. Frozen plasma injections are simple and efficacious and may be given instead of whole blood transfusions whenever the antihemophilic factor alone is needed, that is, when hemorrhage is not accompanied by hypovolemia or pronounced anemia. They may also be used prophylactically when the clotting time falls below a safe level. Difficulties due to lability of the antihemophilic factor may be avoided by preparation and freezing of the plasma within three hours after the blood is obtained. Thawing should be rapid but not abrupt. Plasma may be given drop by drop at the rate of 100 cc. every 15 minutes. Its hemostatic action is as spectacular as that of whole blood; hemorrhages are arrested, and dental operations can be carried out under the protection of daily plasma injections.

## Tuberkulosearzt, Stuttgart

**6:**1-64 (Jan.) 1952. **Partial Index**

Is It Justified to Caution Against Use of Pneumoperitoneum? H. Böhme.—p. 3.

*In Vivo and in Vitro Resistance of Tubercle Bacilli to Streptomycin, Para-Aminosalicylic Acid and Amithiozone. P. Hofmann and L. Nickel.—p. 7.

Effect of Oxygen Inhalation on Spirogram and Analysis of Blood Gas in Chronic Hypoxemia. J. Maurath.—p. 15.

**Drug Resistance of Tubercle Bacilli.**—Experience with streptomycin therapy of tuberculosis showed that treatment with larger doses of the drug should not be continued for longer than 8 to 10 days to prevent with certainty the development of streptomycin resistance. The development of streptomycin resistance may be delayed by repeated short courses of treatment at intervals of several weeks, but the authors are convinced that after a certain period of effective intermittent treatment resistance develops as with continued treatment. The development of resistance could be delayed also by use of daily doses of 0.1 gm. or two of three weekly doses of 0.5 to 1 gm., and significant clinical improvement was obtained in severe cases. A good initial effect was obtained with *p*-aminosalicylic acid in most patients, but after two to three months of treatment the effect of the drug diminished or was completely absent. Susceptibility to a concentration of less than 0.2 μg of *p*-aminosalicylic acid per cubic centimeter was observed in 85% of the strains before treatment was instituted. Resistance to *p*-aminosalicylic acid in a concentration below 1 μg was observed in only a few strains. Retesting after 20 to 40 days of treatment revealed that 1 of 10 strains already had developed resistance to more than 10 μg. After 40 to 60 days of treatment 2 strains were resistant, after three months of treatment 3 of 10 strains were resistant, and after four and more months of treatment, 4 of 10 strains were resistant and 2 additional strains were susceptible only to a concentration of more than 2 μg. Resistance to a concentration of more than 10 μg per cubic centimeter in vitro is in general tantamount to clinical resistance. A test of resistance should be carried out after four months of treatment at the latest, and treatment should be continued only when the test shows a favorable susceptibility, at least to a concentration below 10 μg per cubic centimeter. Treatment with *p*-aminosalicylic acid should be continued only for four to six weeks without interruption, and should then be followed by a rest interval of at least one month. By this procedure development of resistance was considerably delayed and at least a partial success of the treatment could be relied on. Resistance to *p*-aminosalicylic acid develops during treatment, but only after a period twice as long as that required for streptomycin resistance. Primary resistance against amithiozone (conteben®) may be expected in 15% of the patients, and precludes a favorable prognosis. Improvement was obtained with amithiozone in most severe cases in the absence of primary resistance to the drug. Susceptibility experiments in vitro with amithiozone showed only a slight increase in resistance to amithiozone, and susceptibility tests on patients treated with amithiozone for 4 to 21 months seemed to prove this experience in vivo. The success of amithiozone therapy is directly related to the primary susceptibility of the tubercle bacilli to this drug.

V 14
1952

# BOOK REVIEWS

**Diagnostic Bacteriology: A Textbook for the Isolation and Identification of Pathogenic Bacteria.** By Isabelle Gilbert Schaub, A.B., Technical Director, Clinical Bacteriology Laboratories, Johns Hopkins Hospital, Baltimore, and M. Kathleen Foley, M.A., Instructor in Bacteriology, Department of Biological Sciences, College of Notre Dame of Maryland, Baltimore. Fourth edition. Cloth. $4.50. Pp. 356. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1952.

The authors have done an excellent job of condensing a great deal of extremely valuable information into a small book. For this reason, this book will be found in use as a working manual as well as a reference text. The latest developments in diagnostic bacteriology have been included so as to present a working manual of modern bacteriology. New methods of differentiation and identification are well presented in a clear-cut fashion. New media are described and the procedures for biochemical identification have been rewritten and streamlined. The inclusion of a section on determinations of sensitivity of bacteria to antibiotics is of great value. This is a well-planned and improved edition of an already good manual. The excellent readability, organization, and subject material makes this text a worthy adjunct for teaching, reference, or clinical bacteriology. The authors have been able to concentrate much reliable and useful information in a few words.

**Understanding Children's Play.** By Ruth E. Hartley, Lawrence K. Frank and Robert M. Goldenson. Cloth. $3.50. Pp. 372, with illustrations. Columbia University Press, 2960 Broadway, New York 27, 1952.

Detailed reports on reactions of individual children to various play situations comprise a large part of this volume, which is primarily intended as a guide for nursery, play, and elementary and kindergarten school teachers; it also serves the purpose of acquainting directors and teachers with the full potentialities of toys, games, and creative materials for stimulation of healthy child growth. Following an introductory chapter on the function of play in child development, there is a discussion of dramatic play as a mirror of the child and as an instrument for growth. There are other chapters on play with blocks, water-play, use of clay, graphic materials, finger painting, and music and movement. In each chapter, there is an interpretation of the case histories; this feature should be of value to the groups mentioned above. An appendix contains detailed directions on how observers should conduct themselves in their relationships with teachers and children as well as six suggestions on recording observations. This is followed by a more detailed discussion of recording procedures, illustrated by detailed examples. Another section deals with training classroom teachers to observe children at play. With each chapter, there are reference notes and a bibliography. This volume should be of value in any teacher training program, if for no other reason than to familiarize the candidates with this aspect of child study.

**Les syndromes douloureux de la région épigastrique. Tomes I et II.** Par René A. Gutmann. Bibliothèque des grands syndromes; directeur: H. Roger; secrétaires: R. A. Gutmann et R. Porak. Fifth edition. Paper. Pp. 820; 859, with 689 illustrations. Gaston Doin & Cie, 8 place de l'Odéon, Paris, 6e, 1951; 1952.

Painful syndromes of the epigastric region are difficult to write about, since they may be associated with a multitude of causes. It is not unusual, therefore, that two huge tomes of over 800 pages each were required to properly cover the material that these authors discussed. Discussion is detailed. The first 90 pages are devoted to an over-all discussion of the clinical forms associated with epigastric pain and the ulcer syndrome. Duodenal ulcer is discussed in great detail. Diagnostic and roentgenographic data on usual and unusual types of duodenal ulcers are also given.

Chapter 3, which deals with postbulbar ulcer, is particularly well written. Chapter 8 deals with treatment of the ulcer syndrome. It is well written, but the tremendous number of conflicting regimens mentioned might leave the reader confused. The indications for surgery are succinctly stated. The existence of such syndromes as "enterovesicle" and "enterohepatic" is still open to question. The section that deals with biliary dyskinesia is probably one of the best in the book. The importance of avitaminoses as it effects the digestive tract is presented in a scholarly way and is timely. This exhaustive work can be recommended to anyone interested in detailed discussions regarding painful syndromes of the epigastric region. A thorough reading knowledge in French would be a prerequisite.

**Pathological Histology.** By Robertson F. Ogilvie, M.D., D.Sc., F.R.C.P.Ed. Foreword by A. Murray Drennan, M.D., F.R.C.P.Ed., F.R.S.E., Professor of Pathology, University of Edinburgh, Edinburgh, Scotland. Fourth edition. Cloth. $8. Pp. 506, with 295 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; [E. & S. Livingstone, 16 and 17 Teviot Pl., Edinburgh 1], 1951.

This book was not designed to replace but to supplement a standard textbook of pathology. In it, representative features of pathological lesions are reproduced by means of color photomicrographs. The color reproduction is excellent, and the types of lesions shown are well selected. The objective is to enable the student to see photomicrographs that are characteristic of the lesions that are being studied under the microscope. In the text, pathological processes are described, macroscopically and microscopically. An attempt is made to deal with phenomena of both general and special pathology. Obviously, the many variants of pathological processes cannot be included in a book of this limited scope. Nonetheless, for medical students and for physicians who wish to review pathology, this book provides sound guidance in histopathology. It does not profess to do more.

**Body Dynamics.** By Eleanor Metheny, Ph.D., Professor of Education and Physical Education, University of Southern California, Los Angeles. Cloth. $3.50. Pp. 225, with 55 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1952.

Essentially a book on body mechanics, the title of this small volume indicates its emphasis on the dynamic approach to the problems involved. It suggests ways of using the body effectively and methods of maintaining fitness in simple nontechnical language and in a style that the general reader will find interesting and understandable. Following a preview of basic structure, consideration is given to the uses of exercise and relaxation in daily life and then to the conservation of energy through efficient posture in various kinds of activities. A series of exercises for preventive purposes is included, but no incursion into the field of physical medicine is suggested. While the point of view and a majority of the illustrations are of a type that may be a bit closer to the concerns of feminine readers, there is much in the volume that will appeal to persons of both sexes with an interest in posture and body mechanics.

**A Manual of Parasitology for Medical Students and Beginners.** By Mark M. Schapiro, M.D., M.S., Consultant in Tropical Medicine and Parasitology, American Hospital, Chicago. Foreword by Sir Philip Manson-Bahr. Cloth. $5.50. Pp. 140, with 9 plates. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1951.

This book is designed for the use of medical students and beginners in the field of parasitology. There has been an obvious attempt to exclude controversial topics, and the text is confined almost exclusively to diagnosis. In such a large field as parasitology, it is exceedingly difficult to produce a worth-while, condensed form. More colored plates would be desirable. All the illustrations are excellently reproduced, but, since there are no photographs, it will probably leave the beginner with a feeling of frustration because of his difficulty in detecting comparable

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

149
52

forms. As a whole, the manual is satisfactorily written; the format is good; and the paper and binding are excellent. It will probably enjoy some popularity but only as an addition to a more comprehensive text.

**Ruptures of the Rotator Cuff.** By H. F. Moseley, M.A., D.M., M.Ch., Assistant Professor of Surgery, McGill University, Montreal. Publication number 106, American Lecture Series, monograph in American Lectures in Surgery, edited by Michael E. DeBakey, M.D., Professor of Surgery, Baylor University College of Medicine, Houston, Tex., and R. Glen Spurling, M.D., Clinical Professor of Surgery, University of Louisville, Louisville, Ky. Orthopedic Surgery Division, editor: Robert Kelly, M.D., Associate Professor of Surgery, Emory University, Ga. Cloth. $6.50. Pp. 90, with illustrations by Helen MacArthur. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1952.

Professor Moseley is one of the most noted of the living British surgeons. He has been Hunterian professor of the Royal College of Surgeons of England, assistant professor of surgery, McGill University, and associate surgeon, Royal Victoria Hospital, Montreal, Quebec, Canada. Professor Moseley is eminently qualified by training, experience, and an intense interest in the subject to write this book.

As stated in the preface, an attempt is made in this book to formulate objective methods for the evaluation of shoulder function that will assist in the critical analysis of the various forms of treatment. Besides the frontispiece, there are 13 beautifully prepared full page color plates that illustrate various injuries to the rotator cuff and methods of surgical repair. In the introduction, the author gives credit to the late Dr. Codman for his studies of injuries of the shoulder. Whereas Codman's book was characterized by the infinite detail with which he described each lesion and injury as well as the anatomy, physiology, and function of the shoulder, the text in Moseley's small book is brief. The concise text is made adequate by anatomic drawings, and, together, they give a clear picture of the anatomy and pathology of the various injuries and the recommended techniques of surgical repair. An excellent bibliography is appended. Although the text is short, it would be difficult to discover any important omissions. This small book is recommended to all students of orthopedic surgery and to all physicians who are interested in anatomy, orthopedic physiology, or the treatment of injuries to the bones and joints.

**Blood Clotting and Allied Problems: Transactions of the Fourth Conference January 22-23, 1951, New York, N. Y.** Edited by Joseph E. Flynn. Cloth. $4. Pp. 272, with 81 illustrations. Josiah Macy, Jr. Foundation, 565 Park Ave., New York 21, 1951.

This volume, the fourth in a series that reports verbatim the discussions of the Annual Conference on Blood Clotting and Allied Problems, maintains the high standard set by its predecessors. The fourth conference, held in 1951, is notable for its expanded panel of participants, since 8 guests, including the eminent British "coagulationist," Helen Payling Wright of University College Hospital Medical School, London, joined the 17 authorities who are members of the conferences.

As in previous conferences, the discussions are informal in nature and broad in scope. The subject matter is based upon seven major presentations, whose titles and authors indicate the scope and authority of the program: Methods for Direct Investigation of Factors Leading to Thrombosis, Knisely; Studies on Canine Hemophilia, Brinkhous; Characteristics of Blood Platelets: Their Significance in Thrombus Formation, Helen Payling Wright; Morphological and Physiological Studies of Platelets and Hemostasis, Zucker; Antithrombin—Alpha Tocopherol, Seegers; The Transition of Fibrinogen to Fibrin, Laki; and Polaroscopic Studies of the Fibrinogen—Fibrin Reaction, Jaques.

Two topics are of particularly timely interest. Knisely's discussion is confined largely to the description of his most recent experimental work on "sludged blood" and to the elucidation of his views on this provocative phenomenon. Seegers reports his observations on alpha tocopherol as an antithrombin, and in the discussion John H. Kay of Tulane describes experiences with alpha tocopherol both as an index of the thrombosing tendency and as a method for preventing thromboembolism. The critical discussion of the claims advanced by the progenitors of these phenomena are of practical interest to clinicians as well as to those concerned with the experimental approach to intravascular clotting.

The inclusion in this conference of several topics related to the morphological consideration of intravascular clotting is of interest in the light of the preoccupation during recent years with the physicochemical aspects of blood clotting. Although the earliest descriptions of intravascular clotting were based upon purely morphological observations, there has been little or no advance in this direction during the past two decades. The discussions of "sludged blood" and of the role of the blood platelets in thrombus formation indicate a renewed interest in the morphology of the intravascular blood clot.

The published accounts of these conferences are intended primarily for the expert in the particular field and especially for the investigator; however, any physician who has more than a casual interest in intravascular clotting should be thoroughly conversant with the subject matter that appears in these volumes year by year.

**Progress in Allergy. III.** Edited by Paul Kallós. Contributors: J. F. Ackroyd, and others. Cloth. 68.65 Swiss francs $16.25. Pp. 572, with 82 illustrations. S. Karger, Holbeinstrasse 22, Basel; Interscience Publishers, Inc., 250 Fifth Ave., New York 1, 1952.

This book, like its predecessors, is essentially a large periodical between hard covers. Its contents are so varied, both in subject matter and in quality, that evaluation is possible only piecemeal.

The chapters of clinical interest are written for the general practitioner rather than the specialist. These consist of "Allergy in Children" by M. M. Peshkin, "Bronchial Asthma" by L. Unger, "Bronchial Asthma Due to Food Allergy" by A. H. Rowe, and "The Infective Factor in Asthma and Rhinitis" by D. Harley. The repetitiousness of much of the material relating to testing technique and to respiratory allergy in each of these chapters indicates the looseness of editorial control. More serious are the number of inaccuracies in the second of the four articles noted above, an example of which is the author's emphasis on the importance of orris root in cosmetics and his recommendation of hyposensitization for those who are sensitive to orris root. For many years this material has seldom or rarely been used commercially in cosmetics.

The remaining chapters are of interest primarily to the specialist who is experimentally minded and trained in pharmacology and chemistry. A chapter in German, the only one not in English, by F. Wyss and W. Hadorn, describes the use of an instrument for measuring bronchial resistance. Cardiovascular allergy is thoroughly covered by J. Harkavy. Ergot and its derivatives are extensively discussed from the historical and chemical point of view by A. Stoll, its pharmacology and its effects on the autonomic nervous system by E. Rothlin and R. Bircher, and its application in migraine by P. Kallós and R. Kallos-Deffner. A detailed review of drug allergy is furnished by E. A. Brown, and finally, a careful immunologic study of three patients with purpura due to sedormid* (allyl-isopropyl-acetyl-carbamide) closes the volume. In each of these chapters the bibliography is extensive.

Three of the contributors are from England, four from Switzerland, two from Sweden, and five from the United States. One could wish for some evidence of cooperation among the authors and stronger editorial supervision, which might have resulted in a more unified work for both the general practitioner and the specialist.

**German-English Medical Dictionary.** By Louis De Vries, Professor of Modern Languages, Iowa State College, Ames. Cloth. $12. Pp. 586. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 36; Aldwych House, Aldwych, London, W.C.2, 1952.

A new German-English medical dictionary, containing 4,000 German medical terms with their English equivalents, has been compiled by the author with the aid of 16 medical collaborators. The dictionary is oriented toward those whose German background is at college level. The author does not claim completeness; however, terms in all specialized fields of medicine, including psychiatry, are included to make this dictionary a good reference tool for physicians and other workers in the medical field.

V 14
1952

# QUERIES AND MINOR NOTES

## DARK CIRCLES UNDER THE EYES

To the Editor:—*Is there any logical explanation for persistent dark circles under the eyes? In my patient, the general physical examination and routine laboratory studies have been essentially normal. Menstruation accentuates the condition, but the pigment remains prominent at all times.*

*M.D., Maryland.*

This inquiry was referred to three consultants, whose respective replies follow.—Ed.

Answer.—Persistent dark circles under the eyes, a condition of apparent discoloration of the eyelids, particularly the lower lids, is dependent on a combination of anatomic conditions: namely, the thin skin of the lids, the absence of fatty subcutaneous tissue, and the numerous large veins of the palpebral circuit. The dark circles are due to the anatomic arrangement of the relatively large venous blood spaces near the skin. A condition such as menstruation will cause a temporary passive congestion of the blood vessels and will accentuate the discoloration.

When the venous passages are dilated there is seen through the skin an intensified bluish discoloration. The absence of fat, which if present would tend to bury the veins deeper and thus diminish the bluish color showing through the skin, enhances the apparent discoloration of the lids.

The discoloration has no bearing on normalcy or abnormalcy of blood studies or physical disorders, except that in chronically ill or, in some instances, acutely ill persons, where there has been a lack of proper amount of sleep and rest the apparent discoloration will increase and involve the upper lids as well. The dark circles of the lids have no clinical significance.

Answer.—The dark circles under the eyes are due to underlying veins showing through a thin skin. They become accentuated with fatigue, presumably because of pallor of the face. Persistent dark circles do not appear to have any clinical significance.

Answer.—It is difficult to locate any concrete study pertaining to this subject, and this reply should not be considered definitive. The presence of dark circles under the eyes, usually dark brownish and sometimes bluish, is not in itself indicative of physical disease, being oftenest seen in healthy, normal persons and representing merely a pigmentation anomaly, probably of individual genotypic character. The pigment involved is presumably melanin. It would be difficult to believe that there is any cyclical quantitative variation in such a pigment deposit in relation to menstruation, nor can one find any reliable authentication of such a view among gynecologists. It seems more likely that the common lay belief of "dark circles under the eyes" in association with fatigue and suffering is explainable by the contrast of such pigmented areas with a pale and wan countenance.

## SKIN TEST FOR PREGNANCY

To the Editor:—*What are the merits of the colostrum skin test for pregnancy, simplified by the use of the Ogle Micro Dispenser?*

*Clenton H. Whitehurst, M.D., Auburndale, Fla.*

Answer.—The colostrum skin test for pregnancy was developed in 1940. The original investigators made a preliminary report claiming about 95% correct results of known positives, known negatives, and unknowns in about 500 tested cases. The antigen used was whole colostrum diluted 1 to 20 and kept at ice box temperature. Other reports from various clinics were soon published, some of which confirmed and others denied the specificity of the reaction. The antigen, prepared by a commercial company, was used in many of these tests in capillary tubes; it was difficult to aspirate it into a tuberculin syringe and to deliver the exact 1 cc. advised in the test. For these reasons and because it was difficult to make a sharp distinction between a positive and negative result the test was largely abandoned.

Recently a new device for accurately dispensing the exact amount of colostrum at a standard depth in the skin has been developed. Enthusiastic claims have again been made for its accuracy. Sufficient careful work has not been done by investigators to prove or disprove these claims. It would be better to await further confirmation of the value of the test before applying it in a case in which an important decision as to the management of the case depends on the correct diagnosis.

## TOXICITY OF CUTTING OILS

To the Editor:—*A woman has a dermatitis resulting from contact with an oil used in a local industry. She also complains of weakness, loss of weight, her food tasting flat, and numbness in the hands, since the advent of the dermatitis. The cutting oil has the following components: petroleum oil, combined sulfur, and sulfurized lard oil. There is no active sulfur and a percentage of combined sulfur of 0.4%. Its viscosity is 120 at 100 F. (37.8 C). Some of the oil contains 40% lard oil, which I believe is sulfurized, no chlorine, and naphthenic 120. Is it possible for oil of this type to cause the systemic symptoms described? Can oil with combined sulfur cause poisoning?*

*David Kaplan, M.D., Elmira, N. Y.*

Answer.—There are no reports of systemic toxicity from exposure to cutting oils having the composition given. It is possible that the heat generated by the cutting operation may liberate sulfur dioxide and hydrogen sulfide, but the symptoms of toxicity from these sulfur compounds do not correspond to those of this patient. Some cutting oils contain carbon tetrachloride or solid chlorinated hydrocarbons. Systemic poisoning is possible from exposure to such oils, but the symptoms are not those of this patient. Chloracne is caused by cutting oils containing solid chlorinated hydrocarbons, but from the description this patient has dermatitis and not chloracne. The sensory disturbances suggest exposure to heavy metals.

REFERENCE:

Patty, F. A., Industrial Hygiene and Toxicology, Brooklyn, Interscience Publishers, Inc., pp. 583-586.

## FLUID IN THE CUL-DE-SAC

To the Editor:—*While operating on the pelvic organs, I frequently find varying amounts of straw-colored fluid and a yellowish gelantinous material lying free in the posterior cul-de-sac. The smallest amount I saw of this jelly-like mass was about the size of a marble, the largest amount, about the size of a hen's egg. What is the nature of this material and what is its source?*

*Alexander A. Levi, M.D., Boston.*

Answer.—Small amounts of straw-colored fluid are normally present in the peritoneal cavity and are commonly noted in a dependent location during laparotomy. With this fluid, small masses of pale yellow or yellowish-brown, soft, friable, gelatinous material are frequently found. The exact origin and chemical nature of this material is apparently not recorded in the literature. Since it occurs in both sexes and before and after the menopause, it is not dependent on ovulation. It is thought, however, that the small amount of hemorrhage into the abdominal cavity at the time of ovulation increases the amount or results in the reddish-brown color of the gelatinous material. Many surgeons believe that the fluid and gelatinous material are exudates; nevertheless, factual proof of inflammatory origin is lacking, and it seems probable, because of its commonness, that the fluid is a normal physiological secretion and that the gelatinous material is a coagulum of this fluid.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

149
52

## INFANT WITH TUBERCULOUS MOTHER

To the Editor:—*A young Negro mother has pulmonary tuberculosis, with a giant cavity and positive sputum. She has been in close contact with her 10-day-old infant, having nursed him since delivery. The child has not been tuberculin tested, since it was believed that it was too early for the child to have developed tuberculin allergy. Would you advocate a course of streptomycin for the child without waiting for his tuberculin test to become positive? If so, what would be the proper dose and duration of therapy?*

*Irwin G. Karron, M.D., Bronx, N. Y.*

Answer.—The course to pursue depends on what happens to the infant. There is a chance that it did not become infected, in spite of the exposure. There would be no harm in waiting to see if the infant develops symptoms, such as enteritis, bronchitis, laryngitis, pneumonitis, skin manifestations, loss of appetite and weight, or other clinical signs of illness. After 6 weeks, if nothing else appears, a tuberculin test should be performed and, if negative, it should be repeated every 30 days for two more times. Under no circumstances is there occasion for alarm, unless serious clinical symptoms appear or a definite diagnosis can be made. In this event, streptomycin therapy should be instituted, 0.2 gm. daily or 0.3 gm. twice a week, with 250 mg. of *p*-aminosalicylic acid (PAS) four times daily in the feedings. If gastrointestinal symptoms develop from *p*-aminosalicylic acid, the dose can be reduced or suspended for a few days and the treatment begun again with 100 mg. four times a day and later increased to 250 mg. Cultures of laryngeal swabs and chest roentgenograms should be taken at intervals to follow the disease course, which should be controlled within four months. With the foregoing regimen, meningitis should not develop. If meningitis does develop, no change should be made in the treatment, except to double the dose of the drugs. Intrathecal treatment should not be given under the circumstances.

## BCG VACCINE

To the Editor:—*One year ago a student nurse exhibited a positive reaction to the Mantoux test. This year her reaction was negative. The hospital in which she is a student demands that she be given BCG vaccine. Is there any danger in giving this vaccine to a person who has previously shown a positive tuberculin reaction?*

*Matthew H. Paushter, M.D., Binghamton, N. Y.*

Answer.—The question of positive or negative tuberculin reaction of this nurse is still unsettled. The tuberculin test should be repeated. If her reaction is still positive as shown by a test in which a strong dilution of old tuberculin or purified protein derivative of tuberculin is used, no advantage is to be gained by BCG vaccination. If the stronger dilution of tuberculin results in a negative reaction, an error in the first test may be indicated; in this case BCG vaccination is advisable. The vaccine can cause no particular harm to a patient previously infected unless the disease is active. The only unusual result would be a quicker response (within two to six days after inoculation) and, sometimes, a more violent reaction (the Willis-Saye reaction).

## GOUT AND OPACITIES IN THE VITREOUS

To the Editor:—*In the "Standard Nomenclature of Diseases" (ed. 3, Chicago, American Medical Association, 1942, p. 549) there is a reference to opacity in the vitreous due to gout. I have been unable to find any information on this subject. Please give me information on the etiology of these opacities. Do they also occur in hyperuricemia?*

*M.D., Massachusetts.*

Answer.—Gout was frequently implicated as the cause of a number of ocular afflictions in previous years, particularly during the 19th century. With development of accurate methods for determination of blood uric acid (1913), many of the conditions previously attributed to a "gouty diathesis" are now interpreted otherwise. Urate crystals have been found in the cornea and sclera, and episcleritis and conjunctivitis are undoubtedly genuine complications of gout. Wood (Inflammatory Disease in the Eye Caused by Gout, *Brit. J. Ophth.* **20**:510,1936) has reported on the pathological condition of an eye removed because of recurrent inflammation from a woman with an increased uric acid blood level. There were large rounded vitreous opacities and crystals in the cornea and sclera that were not examined chemically. Doggart (Ophthalmic Medicine, Philadelphia, The Blakiston Company, 1949) doubts that there are pathognomonic signs of gout in the fundus. Savin (Remarks on Ophthalmic Gout, *Tr. Ophth. Soc. U. Kingdom* **58**:149, 1938) quotes Graham on this subject: "Any person who has had gout has an excess of uric acid in his blood, in the body fluids, and presumably in the aqueous and vitreous. If an inflammation occurred in the eye or elsewhere due to another cause, uric acid crystals would undoubtedly be deposited." It should be noted, however, that urates do not precipitate readily, even in a supersaturated solution. The possible effects of hyperuricemia are discussed by Bauer and Klemperer in Duncan's "Diseases of Metabolism" (ed. 2, Philadelphia, W. B. Saunders Company, 1947).

## FLYING AND HEART DISEASE

To the Editor:—*Should a boy of 17, suffering from rheumatic valvular heart disease with gross finaings, blood pressure 160/0, be allowed to fly a ship such as a Piper-Cub? There are no signs of heart failure at present.*

*A. Mayer, M.D., Tel Josef, Israel.*

Answer.—From the information received, this person is suffering from aortic insufficiency. Since the insufficiency is primarily on the arterial side, there may be (although heart failure is not present) manifestation of occasional fainting, giddiness or mental irritability, and feebleness. On the whole, it is fairly well agreed that the prognosis in aortic insufficiency is the least good of all valvular lesions. It is not uncommon to see sudden death in these persons. The hemodynamics necessary to maintain good cerebral circulation while flying are inconsistent with this lesion. It is, therefore, recommended that this person not be certified for flying, even as an avocation. The possibility of a stall or spin, even in such a ship as a Piper-Cub, could cause circulatory embarrassment in this person, which would make him unsafe in the cockpit to himself, to his passengers, and to other aircraft.

## DERMATITIS FROM DIESEL OIL

To the Editor:—*In the Feb. 23, 1952, issue of* The Journal, *an answer to a query on the occurrence of dermatitis in diesel railway shop workers failed to mention chromate sensitivity as a common etiological factor. A solution containing, in part, about 6% sodium bichromate is used as radiator fluid in diesel locomotives. Winston and Walsh* (J. A. M. A. **147**:*1133 [Nov. 17] 1951) reported that, over a four year period, chromate sensitivity from contact with this solution accounted for incapacitating dermatitis in at least six railway workers in one diesel railroad shop.*

*Calvin J. Dillaha, M.D.*
*University of Chicago*
*Chicago 37.*

To the Editor:—*The answer to the query regarding allergic dermatitis in persons handling diesel oil* (J. A. M. A. **48**:689 *[Feb. 23] 1952) spoke simply of irritation of the skin by oil. It is probable that some of these cases represent chrome dermatitis, as chromates are used in radiator fluid of diesel engines as rust preventatives. There is invariably some leakage of the radiator fuel into the oil and grease of the motors, and, in this way, the workers constantly come in contact with a weak solution of chromate. Eventually, some of them become sensitized.*

*I have seen several such cases. I recommend that a patch test be done on some of these persons, with a concentration of 0.5% potassium bichromate to determine chrome sensitization. For treatment of chrome dermatitis, I have been employing 3% dimercaprol (BAL) in zinc oxide ointment or in a base containing 10% each of zinc oxide and starch in equal parts of hydrous wool fat (lanolin) and petrolatum. I have found this effective, as BAL seems to be a specific antidote against chrome.*

*Harold N. Cole Jr., M.D.*
*1352 Hanna Building*
*Cleveland 15.*

V 14
1952